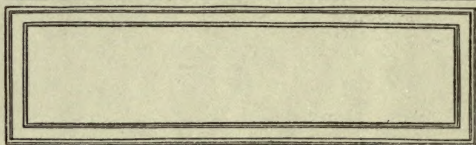
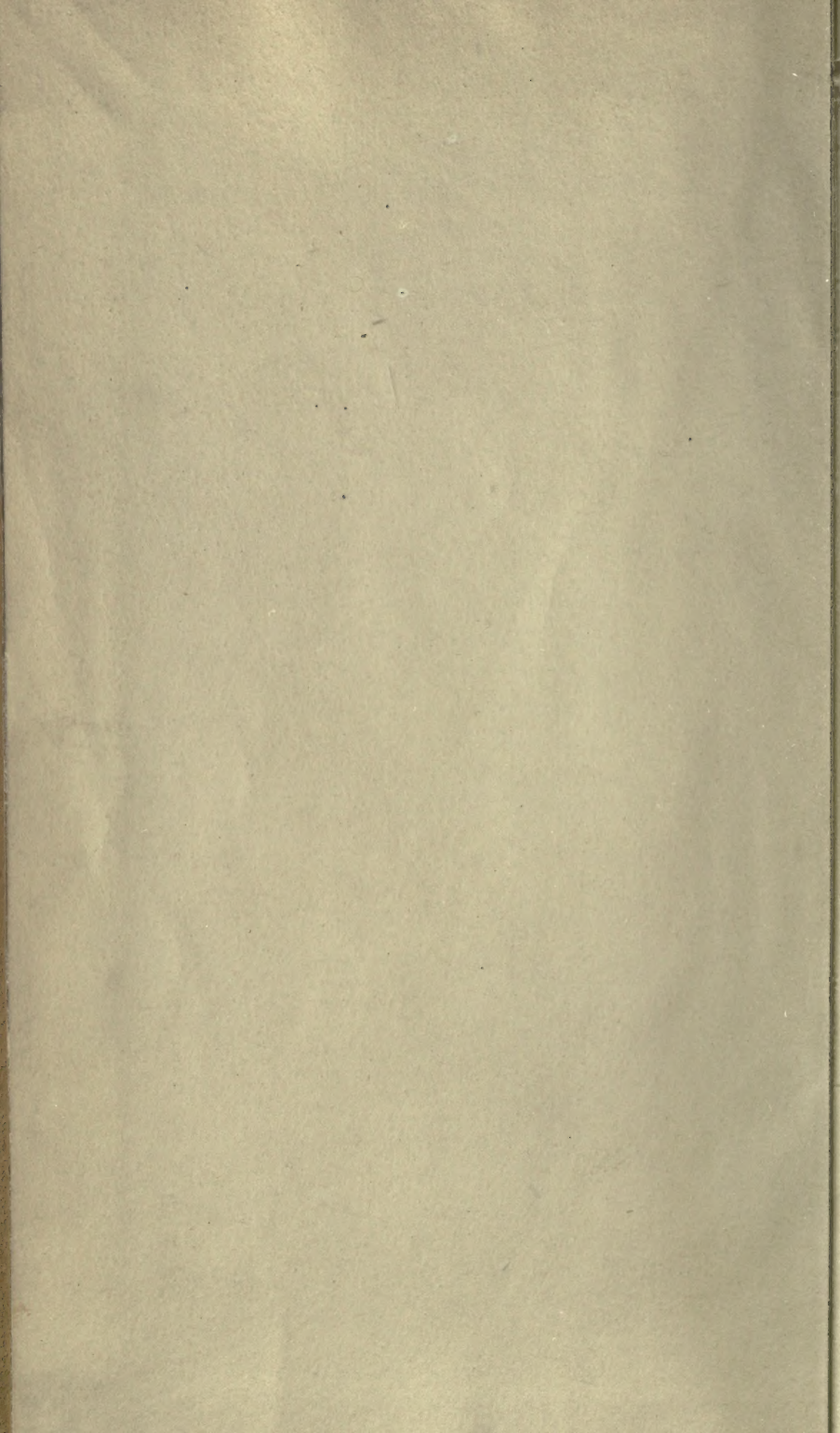


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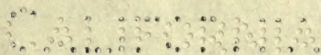
A Manual of Reference for the Use of Ship-
owners, Shipbrokers, and Shipmasters

Originally Compiled by
G. D. URQUHART

FOURTEENTH EDITION

ENTIRELY REWRITTEN AND GREATLY
ENLARGED

*Weigh well
Per Mare, per terras*



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Introduction.

had correspondence with upwards of 10,000 authorities resident in every part of the globe. Letters, many of them accompanied by lengthy official documents, have been received in almost every language of the world. The translation, classification, and arrangement of this enormous mass of information has necessarily entailed many months' hard work, every effort having been made to ensure absolute accuracy by obtaining direct authority for each statement, and that this has been possible is largely due to the unfailing courtesy shown by those to whom application has been made.

The Publishers desire to thank all those who have so kindly rendered assistance, and in particular Lloyd's, and Lloyd's agents throughout the world, the Board of Trade, H.B.M. Consuls, Harbour Masters, Collectors of Customs, Harbour Boards, Ship-brokers, and British and Foreign Chambers of Commerce. Many foreign Governments, including those of the United States, Russia, and the Netherlands have rendered official aid, and for some of the facts relating to harbour accommodation they are indebted to the Council of Lloyd's Register.

32, FLEET STREET,
LONDON, E.C.

January, 1910.

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1915

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AUSTRIA-HUNGARY.

The Austro-Hungarian Empire embraces the great dual monarchy of Central Europe and the provinces of Bosnia and Herzegovina. It has a total area of 261,035 square miles, and a population of 46,973,359.

Commerce.—The special commerce of the common Customs territory, including Bosnia and Herzegovina, comprising imports and exports of merchandise, exclusive of bullion, amounted in 1907 to £194,900,000—imports £97,700,000, exports £97,200,000. A considerable proportion of this trade is carried on by sea through the free ports of Trieste, for the Austrian provinces, and Fiume, for the Hungarian provinces. For this special commerce the values are fixed annually by a permanent commission, comprising representatives of agriculture, trade, and industry. Customs duties are imposed at per 100 kilos., and quantities have to be declared by both importers and exporters, but the administration may, and in the case of imports invariably does, check the declarations.

Mercantile Marine.—The mercantile fleet of the Austrian Empire consisted in 1907 of 14,421 vessels, having a total tonnage of 471,206, made up of 400 steamers with a total of 418,912 tons, and 14,021 sailing ships with a combined tonnage of 52,294.

Internal Communications.—Railway communication is maintained with north Italy and the Adriatic ports by lines over the Brenner and Semmering passes, and with Switzerland up the Inn Valley, through the tunnel under the Arlberg Pass. At the end of 1907 there were 26,637 miles of main and local lines open, the majority being the property of, and worked by, the State. The river Danube is the great commercial artery of the country. It is navigable throughout its course within the Empire, the narrow gorge and rocky bed at Iron Gates, where it issues from Hungary, having been improved by the construction of a canal and the removal of all obstacles to navigation by steamers. The total length of the navigable rivers and canals within the Empire is 9,800 miles, of which 3,280 are navigable by steamers. The most important canals are the Berga, in South Hungary, and the Neustädter, of Vienna, which has been constructed to improve the navigation of the Danube in that city. The country is traversed in all directions by excellent roads. There is a very complete and well managed State system of posts, telegraphs, and telephones.

Currency, Weights and Measures.—The monetary system is established on a gold basis, though the standard coin, the krone, is not coined in gold. The krone of 100 heller (fillér)=10*d.*; 24 kroner or 12 gulden or florins=£1 sterling. The coins in circulation are: Gold—20 krone piece=16*s.* 8*d.*; 10 krone piece=8*s.* 4*d.*; and the ducat=11 kroner 29 heller=9*s.* 4½*d.* Silver—the krone=10*d.*; the florin=1*s.* 8*d.* Nickel—the 20 heller (fillér) piece=2*d.*; the 10 heller (fillér) piece=1*d.* The notes of the State Bank are legal tender. Customs duties are payable in gold. The metrical system of weights and measures is now obligatory throughout the Empire.

Austria-Hungary

Port Charges.—All the ports of Austria-Hungary are on the same footing, the taxes being the same for all the ports of the Empire.

The charges are calculated on the net tonnage, as recognized in Austria. They are payable on arrival, but they may be paid before the ship sails, unless she remains longer than three months in port, in which case they must be paid at the end of that time.

This is the *only* and *inclusive* charge in Austrian ports, and includes harbour, wharfage, Custom House, and light dues.

Steamers.—

80 heller (about 8d.)	per ton net register on the	1st and 2nd voyage.
60 " (" 6d.)	" " "	3rd and 4th voyage.
40 " (" 3d.)	" " "	further voyages.

Steamers having paid the above charge at one port will pay no dues at other Austrian ports for 20 days, provided they go from an Austrian or Hungarian port to another Austrian or Hungarian port, but do not call at a foreign port. Thus, if a steamer goes from Trieste to Fiume, or *vice versa*, she pays harbour dues only at one port; but if from Trieste to Venice and then Fiume, or from Fiume to Venice and then Trieste, she would have to pay at both Austrian ports the full port charges.

If a steamer loads any cargo at Trieste for Fiume (or any other Austro-Hungarian port) she has to pay 30 heller (3d.) per ton extra charges, even if she proceeds direct from an Austrian port to another Austrian port. It is therefore advisable to keep the same steamers in the Adriatic trade.

Sailing Ships.—Austrian vessels, and foreign vessels on a similar footing, pay per net ton register—

8 heller up to	100 tons ($\frac{1}{2}$ d.)	from foreign ports.
20 " exceeding	100 tons (2d.)	" " "
4 " up to	100 tons ($\frac{3}{4}$ d.)	" Austrian ports.
10 " exceeding	100 tons (1d.)	" " "

Foreign vessels, not on same footing as Austrian vessels, each entry into harbour 2 kronen (1s. 8d.) per net ton register.

Quarantine Regulations.—All vessels arriving from any port in the Turkish Empire, including the coast of Syria, Egypt, Barbary, and the Red Sea, must be provided with a bill of health from the Austro-Hungarian Consul of the original port of departure, and of any intermediate port in the above dominions, as otherwise, although furnished with a clear bill of health, they are liable to 24 hours' quarantine observation, or to pay for a medical inspection. Should there be no Austro-Hungarian Consular officer residing at the port of departure or port of call, then a bill of health must be obtained from a consul of any Christian power.

All quarantine charges have been abolished; even the victualling of the health officer, shipped for the period of quarantine, is refunded by the Government. Disinfectants are charged for *only*, at cost price.

Emigration Regulations.—There is at present no law bearing upon emigration from the Empire, but the question is being considered by the Government. Meanwhile the only regulations are those contained in the Ministerial decree of September 1st, 1883, which provide as follows:—*Space:* Each emigrant must be allowed a clear space in the sleeping quarters of 2.80 cubic metres, unhampered by luggage (except small hand bags) goods, or provisions. The deck accommodation must also be such that should the whole of the emigrants be on deck at one and the same time each would have a free space of at least 0.37 square metres.

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Each emigrant must have a separate sleeping berth not less than 1.80 metres in length and 0.60 metres wide. Every berth is to be furnished with a straw mattress, a pillow and a blanket. Two children under 1.2 metres in height will be calculated as one person, but their sleeping places must be separate from each other. A husband and wife may occupy a joint sleeping berth, or one parent and two of their children, providing they are under ten years of age. Between each row of berths there must be a space of at least 0.60 metres. That portion of the ship reserved for the sleeping accommodation must be lit by electricity in such a way that at least one electric lamp of 16 candle power shall illumine every 30 square metres of space. All closed portions of the ship must also be lit by at least one oil lamp for every 60 square metres of space. These lamps must have glass coverings and may burn any oil, with the exception of petroleum or other explosive substance. In the portions of the ship where more than twenty persons pass the night, a complementary lamp must burn from sunset till sunrise. The sleeping accommodation must be covered, but at the same time well ventilated.

The ship must be fitted with steam-heating apparatus, artificial heating being obligatory at a temperature lower than 15°C. and northward from the 30th degree of northern latitude.

Sufficient lavatory accommodation must be provided, so that all the emigrants may be able to wash themselves within two hours. The lavatories of women and children must be separate from those of the men. Ships making a longer journey than such as may be completed within eight days, or journeying from the 30th degree of northern latitude southward, must be supplied with such an arrangement of shower baths as will admit the use of the same by 5 per cent. of the passengers at one and the same time. In addition to these shower baths there must be provided at least two ordinary baths for men and two for women. W.c.s (one for every fifty persons) must be situated at considerable distance from the sleeping accommodation and pantries, and must be so equipped as to fulfil all sanitary requirements. The closets for men must be separate from those used by women.

Food.—Meals are to be served three times each day. The following is the scale of rations to be allowed the emigrants each per week :—

	Grams.
Fresh beef	1,250
Bacon	250
Cheese	100
Lard or butter	175
Fresh bread	3,500
Wheaten flour	600
Dry vegetables, i.e. peas, beans or lentils	500
Rice	250
Potatoes	1,750
Cabbage	250
Dry fruit	100
Sugar	140
Coffee	100
Hungarian wine	2.100 litres.

Salt, vinegar, onions, paprika, pepper, and other condiments, etc., for the preparation of food, in ample quantities.

Beef is to be distributed five times a week in rations of 250 grams. Fresh meat must be served at least three times a week. Salt meat can be given in rations of 200 grams. Salt pork can only be given once a week, instead of bacon, in rations of 100 grams. Bacon is to be served at break-

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fast in rations of 125 grams on the days on which meat is not distributed. Cheese may be issued either for the preparation of food or served as a separate ration at any meal. Lard or butter, in average daily quantities of 25 grams per person, for the preparation of food. Bread made of wheat and rye flour, in the proportion of $\frac{2}{3}$ wheat, $\frac{1}{3}$ rye, in daily rations of 500 grams. If biscuits are issued a ration of 400 grams will be sufficient. Pastry made of wheat flour is to be served twice a week. Peas, beans, lentils, rice, potatoes and cabbage to be properly distributed daily in soup or as an adjunct to meat. Preserved prunes, apples, or figs are to be served once or twice a week. Coffee and sugar is to be served at breakfast, or bacon or cheese instead, if so desired by the emigrant. Hungarian wine containing not less than 10 per cent. of alcohol to be served in daily rations of three decilitres per man, two decilitres per woman. Children under the age of fifteen are to only receive wine if medically prescribed. One onion to be served for each emigrant per day.

Water.—Water is to be issued in quantities of five litres per day per person. This to serve for all purposes, washing, cooking, drinking, etc.

Hospital.—Every ship carrying less than 1,000 emigrants must carry a doctor at the expense of the ship-owner; should the number of emigrants exceed 1,000 an additional doctor must be likewise carried. A sufficient number of nurses must be employed; a separate nurse for women and children is obligatory. There must be two distinct infirmaries—one for men, and one for women—each so fitted as to provide accommodation for at least 1 per cent. of the male and female passengers respectively at the same time. Separate accommodation must also be provided for the reception of patients suffering from contagious diseases. In these sick bays, which must be well ventilated and in which the temperature must be kept at at least 18-20°C., there must be not less than five cubic metres of air space for each patient. Separate lavatories and w.c.s must be provided for the use of patients.

Immigration.—The immigration laws of the Empire place no restrictions or responsibilities upon ship-owners.

BUCCARI.

(See **Porto Ré and Buccari**, page 10.)

CAPODISTRIA.

Capodistria, in lat. 45°36' N., long. 13°49' E., is a town standing on a small island in the Gulf of Trieste, and is connected with the mainland by a causeway.

Population.—About 10,000.

The harbour is small and frequented by coasters. Large vessels anchor in 11 fathoms about one mile from the town. They are exposed to westerly winds. The holding ground is not good. Excellent fresh water and provisions are obtainable.

CASTEL NUOVO.

Castel Nuovo is a small town, just within the entrance, on the northern side, of the Gulf of Cattaro. The anchorage is in 7 fathoms, about 3 cables from the town. Provisions and coal can be had, also a tug boat.

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CATTARO.

Cattaro, in lat. $42^{\circ}25'$ N., long. $18^{\circ}46'$ E., is situated at the extremity of the Gulf of Cattaro.

Population.—5,700.

Imports.—Cotton and woollen fabrics, hardware, wine, sugar, coffee, beer, coal, etc.

Exports.—Cattle, olive oil, silk, sumach, tallow, hides, etc.

Accommodation.—Vessels anchor close to the town in 5 to 7 fathoms. The entrance to the gulf is exposed to southerly winds. The largest vessels can reach the town, and the port would be an excellent one if it were not for frequent and violent gusts of wind from the east and west.

The distance from the entrance to the gulf to Cattaro is about 19 miles. Weather-bound vessels anchor at Megline, close to the quarantine and harbour master's office, in 12 fathoms. Vessels bound to Cattaro must first clear at Megline. Slight repairs can be executed.

Pilotage.—Optional.

Port Charges.—See *Austria-Hungary*.

CHERSO.

Cherso, in lat. $44^{\circ}50'$ N., long. $14^{\circ}23'$ E., is on the west side of the island of the same name.

Population.—4,100.

Export.—Olive oil.

Accommodation.—The harbour is small but good. The entrance is about 2 cables wide, the depth in the middle being 11 fathoms with good holding ground on a mud bottom. Vessels of 16 feet draught can anchor close to the town. Fresh water and provisions can be obtained.

CITTANOVA.

(See *Quieto and Cittanova*, page 11.)

FIUME.

Fiume, in lat. $45^{\circ}21'$ N., long. $14^{\circ}27'$ E., is an important port on the Adriatic, and is the chief place of export for the produce of Hungary.

Population.—38,955.

Imports.—Petroleum, rice, maize, jute, wine, phosphates, olive oil, fruits, coal, cotton, sulphate of copper, etc.

Exports.—Oak, fir and beech staves, flour, wheat, barley, tobacco, wine, mineral waters, rape seed, iron, manganese ore, rags, beans and prunes.

Accommodation.—The harbour, which faces the town, is a fine one, consisting of three large basins with four piers protected by a breakwater 4,419 feet in length. Further works are now in course of construction, which, when completed, will add considerably to the accommodation now provided. A special basin, well protected from the sea, has been built at a safe distance from the port for the petroleum trade.

Austria-Hungary—Fiume (continued).

The main harbour and petroleum dock are capable of accommodating the largest steam and sailing ships. Oil tank ships are discharged by steam pumping at the rate of 1,000 tons per 24 hours. The breakwater now runs parallel to the shore quays and piers, i.e., from east to west by north, but its prolongation will bend more southerly, with the object of making the entrance larger and for the further purpose of forming an out port. The entrance faces N.E., and is marked by two red lights.

Porto Grande.—The piers and quays afford a total length of 8,924 feet wharfage. The depth alongside ranges from 21 to $24\frac{1}{2}$ feet. The entrance is 738 feet wide and 18 fathoms deep. There is a crane to lift 10 tons at the end of mole "Zichy," also one to lift $\frac{1}{2}$ ton, and one to lift 2 tons. The Government have a floating crane capable of lifting 30 tons.

Porto Gabriele Baross.—The total length of wharfage at the piers and quays is 4,134 feet, with a depth alongside of 21 to 24 feet. The width at the entrance is 164 feet, and the depth 11 fathoms.

Fiumara.—The total length of quayage is 3,182 feet, with a depth of $14\frac{3}{4}$ feet alongside. Fiumara is reserved for the timber trade.

Porto di Petrolio.—The total length of quayage is 1,935 feet, with 21 feet alongside. The width of the entrance is 164 feet, with a depth of 7 fathoms. The water in the middle of the port is 12 fathoms deep. This port is reserved for the petroleum trade. There is a patent slip to take a vessel 300 feet long.

Repairs can be executed. Fiume is in railway communication with Vienna, Trieste, and Italian towns, as well as with those of Croatia and Hungary.

Time Signals.—Chronometers can be checked. A black ball is hoisted on a low square tower 623 yards from the western end of the Maria Teresa mole. The ball is hoisted five minutes before the signal, and dropped at noon Mid-European time, equal to 23 hrs. 0 min. 0 sec. Greenwich mean time, and 23 hrs. 57 min. 43.5 sec. local mean time.

Pilotage.—Optional. There are a number of registered pilots, and if their services are employed it is better, in order to avoid disputes, that arrangements for payment be made beforehand, as there is no special tariff.

Quarantine.—Should a vessel be ordered for quarantine it incurs no extra harbour dues; they have to pay only for sanitary guardians, about 4 kroner per day, and the sanitary disinfections; doctor's daily visit, 8 kroner.

Port Charges.—See **Austria-Hungary**.

Ballast.—Stone, at 4 kroner per ton, free on board; **Stevedores** unloading grain, 60 fillér per ton; loading flour and bag goods, 90 fillér per ton; timber, wood and other heavy goods, 1.20 kroners per ton.

Towage.—By Government tugs at tariff rate.

Boat Hire.—10 kroner per day.

Mooring and Unmooring.—40 kroner. When a vessel has to be moored and unmoored a man attends from the harbour master's office; he receives a gratuity of 10 kroner.

Water.—5*d.* per 1,000 litres, supplied by harbour authority direct on board from hydrants.

Provisions.—Good and plentiful. Beef, 160 to 170 kroner per 100 kilos. **Wood:**—Cheap; **Coal:**—Reasonable.

Austria-Hungary—Fiume (*continued*).

Consular Fees about 12 kroner.

Ship's Chandler.—Attendance, 20 kroner.

Brokerage.—5 per cent. **Agency fee,** £10 10s.

Pro Forma Charges on a steamer of 3,000 tons register, with a cargo of rice in and ballast out, drawing 24 ft. loaded:—

Harbour dues at 80 heller per reg. ton	Kr. 2,400
Agency fee (£10 10s.)	252
Mooring and unmooring	40
	<hr/>
	2,692 = £112 3s. 4d.

LISSA.

Lissa is in lat. 43°3' N., long. 16°10' E.

Population.—9,870.

Import.—Food stuffs.

Export.—Wine.

Accommodation.—Lissa is situated on the northern side of an island of the same name at the head of the Bay of San Giorgif. (See page 11.) The depth of water near the quay is from 9½ to 13 ft. at high water, and from 8 to 11½ ft. at low water.

Port Charges.—**Pilotage** is compulsory for strangers; according to agreement with the pilot at either Spalato or Ragusa. **Entrance Fees:**—80 heller per ton. **Clearance Fees:**—For vessels under 100 tons, 4 heller per ton; over 100 tons, 10 heller per ton. **Wharfage:**—Only available for mail steamboats. **Lighterage:**—Not necessary, as there are quays all along the shore. **Labour:**—3 to 5 kroner per man per day. **Brokerage:**—None.

Pro Forma Charges on a steamer of 400 tons register, with a cargo of wine in and ballast out, drawing 14 ft. loaded:—

Harbour dues at 84 heller per ton	Kr. 336
Pilotage, in and out	60
Boat hire	10
Other charges	20
	<hr/>
	426 = £17 15s. 0d.

LUSSIN PICCOLO.

Lussin Piccolo is in lat. 44°35' N., long. 14°25' E.

Population.—6,200.

Accommodation.—The port, which extends nearly 3 miles in a N.W. and S.E. direction, is about 3 cables wide. It is a safe and conveniently situated harbour. Vessels anchor in any part of the inlet in 6 to 23 fathoms, on good holding ground, but the N.E. side, not far from the outer houses of the town, is usually preferred on account of N.E. winds which prevail at certain seasons of the year.

Lussin Piccolo is now becoming a port of call for ships bound to Trieste, Fiume, Venice, and Ancona; no port charges are levied on vessels calling for orders.

Time Signals.—Chronometers can be checked. A time ball and

***Austria-Hungary—Lussin Piccolo* (continued).**

two black circular discs are hoisted on the S.W. extremity of the quay facing the public square. The ball is dropped at noon Mid-European time, equal to 23 hrs. 0 min. 0 sec. Greenwich mean time, and 23 hrs. 57 min. 52.4 sec. local mean time.

MACARSCA.

Macarsca is in lat. 43°20' N., long. 17°1' E.

Population.—6,000.

Imports.—Colonial produce.

Exports.—Wine and olive oil.

Accommodation.—There is a great depth of water in the centre of the port, and from 16½ to 19½ feet at the quay.

Harbour Dues.—See **Austria-Hungary.**

OSSERO.

Ossero is in lat. 44°42' N., long. 14°26' E.

Population.—1,500.

Exports.—Wine, timber, and limestone.

Accommodation.—Ossero lies on the west side of the island of Cherso, at the head of the Adriatic Sea. It is unhealthy, and there is little trade. The channel between Lussin and Cherso Island leading to Ossero is about ½ mile wide. Vessels of over 6 feet draught cannot come nearer than ¼ mile of the town, where they anchor in 12 fathoms.

POLA.

Pola is in lat. 44°53' N., long. 13°52' E. The harbour is one of the finest in the Adriatic, affording accommodation for the largest ships. Vessels of 18 feet draught can moor to the town quays. Being a naval port, there is very little trade beyond the supply for local consumption. Fresh water is abundant. The Government have two balance or floating docks; No. 1, 468 ft. long, 83 ft. wide at the entrance, 28 ft. on the sill; No. 2 (C. and S. type), 461 ft. long, 85 ft. wide at the entrance, 33 ft. on the blocks, 15,000 tons lifting power.

These docks are only available for merchant vessels under extraordinary circumstances. The Government have a dockyard here.

Time Signals.—Chronometers can be checked. A ball is hoisted on the S.W. bastion of the harbour castle 5 minutes before the signal. The ball is dropped at noon Mid-European time, equal to 23 hrs. 0 min. 0 sec. Greenwich mean time, and 23 hrs. 55 min. 23 sec. local mean time. A gun is also fired.

PORTO RÉ AND BUCCARI.

Porto Ré, in lat. 45°17' N., long. 14°35' E., and **Buccari**, in lat. 45°19' N., long. 14°32' E., are situated about 11 miles S.E. of Fiume and have a common entrance. The anchorage is good in both ports, there being excellent mooring accommodation. The west point of Porto Ré is well marked by a revolving light. Good water is obtainable.

Sailing vessels find the ports difficult to make when N.E. winds are blowing.

Austria-Hungary.

QUIETO AND CITTANOVA.

Quieto, in lat. $45^{\circ}17'$ N., long. $13^{\circ}34'$ E., and **Cittanova**, in lat. $45^{\circ}19'$ N., long. $13^{\circ}34'$ E. have excellent anchorages in from 2 to 12 fathoms. At Cittanova there is only accommodation for one or two vessels at a time. Good fresh water may be obtained, and small quantities of provisions.

RAGUSA.

Ragusa, in lat. $42^{\circ}40'$ N., long. $18^{\circ}8'$ E., is about 40 miles W.N.W. of Cattaro.

Population.—8,000.

Imports.—Manufactured goods.

Exports.—Olive oil, leather, laurel leaves, timber, iron, and cattle.

Accommodation.—The proper harbour of Ragusa is Gravosa, about two miles N.W. where large vessels can lie in safety. There is a large export of timber and iron. Vessels load alongside a quay suitable for steamers of 6,000 tons.

Ragusa port is a cove on the east side of the town, and has space for a few small vessels in about 3 fathoms. S.E. winds cause a heavy sea at the opening, which is between two moles, rendering entrance difficult and sometimes impracticable. The road has a depth of 17 to 21 fathoms; it is exposed to a heavy sea in S.E. winds, at the first symptom of which it is the custom for vessels to weigh anchor and proceed to Calamota Channel or, if obliged to remain, to haul close under the north shore of the island, and make fast to stone pillars provided for that purpose. In this position they often ride out heavy weather. This anchorage is resorted to in the summer season only; it is almost the only one on the coast of Dalmatia at which cables are laid out to the shore against S.E. winds.

Port Charges.—See **Austria-Hungary.**

Water.—Free from the aqueduct.

Interpreter's fee for attendance during the stay of vessel, 80 florins; commission to agents, 2 per cent.

ROVIGNO.

Rovigno is in lat. $45^{\circ}5'$ N., long. $13^{\circ}39'$ E.

Population.—12,000.

Accommodation.—There are two harbours; the old one being chiefly frequented by small coasting vessels. The new harbour, commonly called Val di Bora, can accommodate vessels of a larger size, but is exposed to westerly winds.

Pilotage.—Vessels bound for Venice can always find pilots here.

Provisions are cheap and plentiful, but fresh water scarce and dear.

SAN GIORGIF.

San Giorgif Bay, in lat. $43^{\circ}3'$ N., long. $16^{\circ}10'$ E., is on the northern side of Lissa Island. The anchorage is in 14 fathoms, with a mud bottom, about $\frac{1}{2}$ mile off shore. There are 5 fathoms close to the town of Lissa,

Austria-Hungary—San Giorgif (*continued*).

which stands at the head of the bay. Large vessels can enter and are well sheltered. Fresh water is scarce. Provisions and coal can be had.

SEBENICO.

Sebenico is in lat. $43^{\circ}43'$ N., long. $15^{\circ}53'$ E.

Population.—About 10,000.

Exports.—Wine, spirits, liqueurs, coal, timber, and cellulose.

Accommodation.—The town is approached by the San Antonio Channel. The port is a narrow basin, $5\frac{1}{2}$ miles long by from 2 to 5 cables wide, with 12 to 21 fathoms, on mud. Vessels anchor to N.W. of the harbour light. There are several mooring buoys suitable for vessels under 200 ft. in length.

Water is good and plentiful, but other supplies are scarce.

SEGNA.

Segna, in lat. $45^{\circ}0'$ N., long. $14^{\circ}40'$ E., is in the channel of Della Morlacca.

Exports.—Wood and staves.

Accommodation.—There is a fair anchorage, with numerous buoys. Shore tackle is indispensable in all seasons, as the harbour affords little protection from the N.E. winds which prevail, particularly during winter months. Harbour pilots may be had. Departure is through Bocca di Segna between Besca (on the island of Veglia), and the island of Paravichio, to Veglia, Cherso, Arbe, Pago, and Zara. Fresh water may be obtained.

SPALATO.

Spalato is in lat. $43^{\circ}31'$ N., long. $16^{\circ}26'$ E.

Population.—About 18,000.

Exports.—Wine, oil, cattle, skins, tallow, coal, wool, etc.

Accommodation.—The port is protected by a breakwater, and is suitable for vessels of any size; the depth at the quays of the town is 15 to 18 ft., and at the breakwater 20 ft.

The Government wharf is 344 ft. long, with an average depth alongside of 19 ft. 7 in.

Provisions can be obtained at reasonable prices.

Harbour Dues.—See **Austria-Hungary**.

TRIESTE.

Trieste, in lat. $45^{\circ}39'$ N., long. $13^{\circ}48'$ E., is the principal seaport city of the Austrian Empire. Distance by sea to Liverpool, 2,907 miles.

Population.—205,136.

Accommodation.—The port, which at present consists of the old port and the railway port, has sufficient accommodation for a considerable number of vessels of any size. The old port is sheltered from all winds between N. and N.W. round by E., but is exposed to those which

Austria-Hungary—Trieste (continued).

blow from the W. to N. These, however, are seldom very strong, and little danger is to be feared. This harbour is entirely bordered by stone quays with several projecting moles. The railway harbour stands to the N. of the old one, and is formed by five projecting moles and a breakwater. In addition to the two harbours named, a new one is in course of construction at St. Andrea, S. of the lighthouse, which when completed will have accommodation for twice the number of vessels which the present harbour affords. This new harbour will be constructed by the building of three moles of considerable size, sheltered by breakwaters, leaving ample space between them for vessels to enter and leave the port. While this construction work is in progress, as it will be for some time to come, it will be advisable for captains to keep clear of the submerged works, which are marked by buoys and light-ships. The N.E. wind (known as the Bora) blows at times very strongly, especially during the winter months, and good strong moorings are required to prevent damage. The harbour authorities are always ready to assist vessels in distress with their own moorings. The Government have also available two powerful steam tug-boats, which are placed at the service of stranded vessels or vessels in danger. Up to the present this assistance has been rendered gratis, no claim being made for the use of steamers, boats, or moorings. In case of fire, steam fire engines are always at hand to help. Inside the old harbour there is a canal, accessible to vessels under 300 tons register, and not drawing above 14 ft., where loading and discharging is effected at the quay with dispatch and safety. The canal dues are 2 heller per register ton per day, paid by the consignees of the imported goods; those on outward bound cargoes being paid by the ship.

The Porto Nuovo has 7,778 ft. of quayage, with $28\frac{1}{2}$ ft. of water alongside. Each berth in the Porto Nuovo is supplied with two hydraulic cranes capable of lifting $1\frac{1}{2}$ to 3 tons each.

The Stabilimento Tecnico has two floating cranes, to lift 25 and 35 tons respectively. Lloyd Austriaco has a crane on the quayside to lift 120 tons, and a floating crane to lift 25 tons. The Maritime Government have a floating crane to lift 40 tons, and the I. & R. Magazzino Generali have a floating crane to lift 40 tons. The Stabilimento Tecnico Triestino have a dry dock at San Rocco 414 ft. long, 66 ft. wide at the entrance, and 26 ft. on the sill. The charges for the use of this dock are according to the size of the vessel. In the adjacent shipbuilding yard and engineering works every opportunity is afforded to steam and sailing vessels for the execution of all necessary repairs at reasonable terms. The Austrian Lloyds Steam Navigation Co. also allow the use of their dry dock (446 ft. long, 68 ft. wide at the coping and 19 ft. on the sill) to other ships when not engaged by vessels of their own fleet, and repairs can be quickly executed in their dockyard on moderate terms. There is also a floating dock belonging to the Impresa Triestina del Dock Flottante, 196 ft. 8 ins. long, 55 ft. 9 ins. wide at the entrance, capable of lifting 2,000 tons. There is a patent slip (Morton's) to lift vessels to 2,100 tons.

Divers are obtainable on reasonable terms.

Trieste is the headquarters of the Austro-Hungarian Veritas Office, which was instituted in 1858 by the Chamber of Commerce for the classification of vessels of all nations.

The Chamber of Commerce have published the rules and regulations

Austria-Hungary—Trieste (*continued*).

of the port, which, among other matters, provide for the settlement of any question arising from insufficiency of charter-parties about lay-days, payment of freight, delivery of cargo, demurrage, etc.

Time Signals.—Chronometers can be checked. A black ball is hoisted on white staff near the N.W. side of the lighthouse, five minutes before the signal. The ball is dropped at noon Mid-European time, equal to 23 hrs. 0 min. 0 sec. Greenwich mean time and 23 hrs. 55 min. 2 sec. local mean time. A gun is also fired.

Chronometers can be rated at a charge of 10 kroner for the first month and 2 kroner for each subsequent month.

Pilotage.—Optional. The access to the roads is very easy, being free from any hidden danger. If, however, pilotage is required, such assistance may occasionally be obtained off Rovigno, and in any case a few miles off the roads of Trieste. Such pilots are not licensed, and, as there is no special tariff, in order to prevent disputes it is advisable for captains to make their own arrangements before accepting their services. £3 would be a fair price to pay from Salvore, and £2 to £2 10s. if taken a few miles from the roads. Any shifting from the roads to a berth is made in charge of a Government pilot, who directs the mooring, and likewise the unmooring and going out to the roads; for this service no fee is charged. If desired by masters, Government pilots or policemen can be obtained for watching vessels by day or by night, the fee being 4 kroner each per day, the same per night. Boats are always at hand, and meet vessels coming in, for the purpose of making fast a rope to the buoy; the charge for this is from 16 to 30 kroner. A boat manned by four hands is recommended as very useful in mooring for the stay, and costs 30 to 40 kroner, according to the size of the vessel, the fee being the same for unmooring.

Harbour Dues.—See **Austria-Hungary**.

Towage.—Several steam tugs are available, the charges being 80 kroner for a distance of about 5 miles and less in proportion. The charge for shifting within the roads and the port is 50 kroner.

The Austrian Lloyds have two steam tugs fitted with triple expansion engines of 420 h.p., and a powerful steam pump for salvage operations, rendering good service at the following tariff:—

Towing from the port to the roads, or vice versa	Kr. 50
Towing from the port to a distance situated on a line between Miramar and Capodistria, or vice versa	80
Towing from the port to Salvore, or vice versa	120
Other towing services or assistance, per every hour the fires are kept up	30
Towing, for every hour demurrage	20
For the use of the steam-pump separately, per hour	20

N.B.—Should the tug have to raise steam on purpose, which requires six hours' notice, the price will be raised by 50 kr.

The towing rope must be furnished by the vessel in tow. The company is not answerable for accidents occurring during the towage, as the direction of the operation falls on the captain of the ship towed.

Crannage on imported goods is paid by receivers; the ship pays 4 heller per 100 kilos. on outward bound cargoes.

Floating steam cranes capable of lifting heavy packages are obtainable at moderate rates. Almost all the shipping companies now claim that this crannage expense shall be borne by shippers.

Austria-Hungary—Trieste (*continued*).

Ballast.—Is supplied and placed on board sailing vessels at—

Kr. 1-70 per ton of 1,000 kilos., coarse and rubbish.
 Kr. 2-50 „ „ „ gravel and sand.

And on board steamers at—

Kr. 2-00 per ton of 1,000 kilos., coarse and rubbish.
 Kr. 2-80 „ „ „ stones, gravel.
 Kr. 0-80 „ „ „ for taking all kinds of ballast from sailing vessels.
 Kr. 1-20 „ „ „ for taking all kinds of ballast from steamers.

Kr. 0-06 per ton of 1,000 kilos. to be added to the above rates if the baskets are supplied by the ballastmen and a further kr. 0-20 per ton if steamers do not supply the winches under steam and winchmen.

Lumpers discharging steamers cost 8*d.* sterling a ton weight, or measurement, in general cargoes; and the same per ton of 40 cubic ft. of cotton.

Stevedores' Charges.—For putting cargo on board of steamers, including the stowage: 1*s.* per ton weight or measurement in general cargoes; kr. 2-80 per 1,000 boards or per 100 cubic ft. of square firwood; kr. 1-60 per 1,000 kilos. of oak staves.

Public Weighers.—Kr. 0-20 per 1,000 kilos. according to the tariff; but in case of full cargoes, or of large quantities, contracts are made at a considerable reduction, sometimes amounting to one-third of the above rate.

Public Measurers.—Kr. 0-18 per cubic metre of oak timber, round trunks, or spars; kr. 0-30 per ton of 40 cubic ft. of staves or other goods of any kind.

Water.—Good fresh water is supplied at kr. 1-00 to kr. 1-20 per ton from the Docks Administration; or from boats outside the new harbour at from 7 to 8 kr. per ton. **Coal.**—Welsh steam 25*s.* to 30*s.* per 1,000 kilos.; Austrian steam 12*s.* to 14*s.* per 1,000 kilos. Free into ship's bunker and trimmed.

Ships' Stores and Provisions of all kinds may be obtained at reasonable prices.

Quarantine.—On the ship's arrival she must be at once reported to the health officer. Quarantine is imposed in special circumstances only, such as an epidemic at the last port of call, and is ruled by special regulations. The lazaretto is situated at Valle St. Bartolomeo, between Punta Grossa and Punta Sottile, about four miles S.W. of Trieste, where vessels lay in safety, being exposed only to the W. and N.W. winds, which seldom blow with any violence.

Customs Regulations.—Customs officers come on board on arrival, and all kinds of tobacco, cigars, silk, tea, etc., must be shown to them, otherwise heavy fines are imposed. Before arrival, captains must have in readiness the list of stores and provisions, as well as of any new wearing apparel or other articles belonging to the crew, to hand to the agent reporting the ship, in order to have it inserted in the Custom House manifest for entering the ship with her cargo, or in ballast.

Austria-Hungary—Trieste (*continued*).

Pro Forma Charges, on a steamer of 1,000 tons net register with 2,000 tons general cargo in and ballast out:—

	Kr.
Port charges, 1st voyage 8 heller per ton net reg.	80
Consulage, £1 5s. at 24 kr. per £	30
Boat for making fast at the buoy	10
Boat and men for mooring at loading berth	24
" " unmooring	24
Tallymen attending delivery or receipt of cargo, at 6 kr. per day each, say	24
Lumpers discharging, 8d. per ton d.w. or measurement.	1,600
Agency and general attendance in and out, £5 5s. to £10 10s., according to size and capacity of the ship	126
Clearance, manifest, and copies	40
	<hr/>
	1958 = £81 11s. 8d

ZARA.

Zara, in lat. 44°7' N., long. 15°15' E., is 170 miles S.E. of Venice.

Population.—19,000.

Exports.—Maraschino, oil, and grain.

Accommodation.—This is a small but secure harbour, about a cable length wide; the entrance is narrow, being barred by a reef. The lowest depth is 5 fathoms, about 50 yards from the town. Vessels of large size can anchor in the bay in 8 to 10 fathoms, but are exposed to northerly winds. The anchorage is about half a mile from the town.

Provisions are plentiful.

BELGIUM.

Belgium, a small kingdom situated on the western seaboard of Europe, has an area of 11,373 square miles and a population of 6,693,548. The coast line is very short, extending for a distance of only 42 miles.

Commerce.—Belgium is distinguished for its great industrial and commercial wealth, the annual trade being valued at over three hundred and fifty million pounds sterling, divided as under :—

Imports : Domestic	£150,944,000
Exports :	£113,924,000
Goods in transit	£93,920,000

The trade between Great Britain and Belgium is conducted under an arrangement, terminable at any time after three months' notice, by which "most favoured nation" treatment is reciprocally accorded. In arriving at valuation the authorities make a distinction between those goods which are subject to *ad valorem* duties and other imports and exports. The "quantities" of goods liable to payment of duty are in all cases strictly scrutinized, but in most other cases the signed declarations of importers or exporters, as the case may be, are accepted.

Mercantile Marine.—Although the foreign commerce of Belgium is great, yet her mercantile marine is very small, the latest returns available (1907) showing that the total tonnage of all vessels of 50 tons and upwards amounts to 120,187 tons, divided as follows : Seventy-four steamers 119,223 tons, and three sailing vessels 964 tons.

Internal Communications.—These are everywhere good. The railways open for traffic have a length of about 3,000 miles, of which the vast proportion belongs to the State, only a very short section, about 350 miles, being in the hands of private companies. There are also nearly 3,000 miles of public roads in the kingdom. But the most important means of communication are those provided by nature in the way of navigable rivers, and by the public authorities by the construction of canals. The river Meuse, in the east, flows through a fine valley serving the towns of Dinant, Namur, Seraing and Liège ; it has been canalised as far as Visé, close to the German frontier, to render it fully navigable. The Schelde, in Western Belgium, has upon its banks the towns of Tournai, Audenarde, Ghent, Termonde, and Antwerp. Two canals keep up communication between Ghent and the sea, the one running to Bruges and Ostend, and the other due north to Terneuzen. Extensive works are now in progress having for their object the widening and deepening of the last named, so as to make it available to ships of any size right up to Ghent. These works will be completed by the end of 1909, but in the meantime (since October, 1908) ships up to 367 ft. long, 48 ft. wide and with a draught of 21 ft. 3 in. are allowed to pass the new sluice and steam or be towed up to Ghent. Another very important work has been the construction of a new port at Zeebrugge, and the cutting of a deep water-way right up to Bruges, by means of which the largest ships will be enabled to enter and discharge or load at the new docks at Bruges. A number of other canals have also been constructed with the object of developing the system of inland navigation.

Belgium.

Post, telegraph, and telephone services have been established, and are worked on efficient and up-to-date methods.

Currency, Weights and Measures.—Belgium belongs to the Latin Monetary Union, the franc of 100 centimes being worth about 9-51*d.* or 25-25 fr.=£1 sterling. The weights and measures are those of the metrical system.

Tonnage Measurement.—Steamship owners of all nationalities, except those of Russia and Sweden, where the system of measurement is the same as that in force in Belgium, would do well to bear in mind that in determining the net tonnage measurement of a ship the Belgian authorities measure every vessel separately instead of, as in most other countries, making an average deduction of 32 per cent. from the gross tonnage. The result is that the net tonnage of a steamer, when measured in Belgian ports, is about 18-5 per cent. more than if taken in accordance with the provisions of the Merchant Shipping Act, 1894.

Emigration.—Every vessel desiring to engage in the conveyance of emigrants from ports in Belgium must be in a thoroughly sound condition, properly and fully fitted out and manned so as to ensure her satisfactory navigation.

Accommodation.—The deck space to be allotted to each emigrant shall be equal to 25 square decimetres, and the accommodation on the main deck 2-850 cubic metres calculated to a height of 2-40 metres. If the decks are further apart than 2-40 metres, the cubic space is to be only calculated at that height. The accommodation per emigrant on the lower deck is to be one-third in excess of that on the main deck.

Provisions.—Before leaving a Belgian port the master of an emigrant vessel must deposit with the emigration officer the following declaration:—

Captain of the ship at named ,
about to depart for , acknowledges having received on board
his vessel, as foodstuffs for the passengers and crew, the following articles,
of good quality, which have been examined in his presence in compliance
with Article 5, No. 2, of the Royal Decree of December 2, 1905:—

	Quantity per 10 days per head.
Potatoes	kilogs. 3
Biscuits	3
Barley or barley flour	0-550
Flour	1
Peas and beans	1
Rice	0-550
Salt bacon	0-850
Beef, salt or fresh, and/or mutton	1-250
Butter (with option to replace half the quantity with lard of smoked bacon)	0-350
Moist sugar	0-200
Prunes or dried fruits	0-175
Sourkrout	0-175
Dried cod (stockfish) or cod	0-175
Vinegar	litres 0-25
Salt or smoked herrings	number 3
Coffee	kilogs. 0-100
Chicory	0-070
Syrup	0-070
Dutch cheese	0-070
Salt	0-700
Tea	0-020
Pepper	0-010
Fresh bread on departure	1-750

Belgium.

Drinking water		
Fresh vegetables and onions		litres 4 per day per head.
Extract of meat.	} In sufficient quantities.	
Condensed milk		
Sago		
Lime juice		
Farine lactée		
Vin de Bordeaux.		

5 kilogs. of potatoes may be substituted for 1 kilog. beans and peas.
 0.750 kilogs. of flour may be substituted for 1 kilog. biscuits.

ANTWERP.

Antwerp, in lat. $51^{\circ}13' N.$, long. $4^{\circ}22' E.$, the chief port of Belgium, is situated on the right bank of the river Scheldt, about 60 miles from Flushing.

Population.—304,032.

Imports.—Grain, unworked textile products, wood, mineral products, metals, hides, chemical products, fabrics, cloth, coffee, coal, etc.

Exports.—Metals, grain, coal, thread, raw textile products, machinery and tools, hides, glassware, fabrics, cloth, raw mineral products, etc.

Accommodation.—Vessels drawing 30 ft. by day, and 26 ft. by night, can come up to Antwerp at high water neaps; and 15 ft. by day, and 13 ft. by night at low water springs. The quays allow vessels to moor alongside with 28 ft. draught, there being everywhere at least 8 metres (26 ft.) of water at low tide. These new quays have a total length of about 5,500 metres (18,044 ft.) on a breadth of 100 metres (327 ft.) with movable hydraulic cranes on rails, for discharging and loading the ships. Sheds of 150 ft. deep are built all along, and four tracks of rails alongside these sheds convey the goods to and from the railway stations. There are docks, having all round tracks of rails in communication with the chief railway goods station, while spacious sheds have been built lately on almost all the quays.

The dimensions of the principal wet docks are as follows:—

Name of Dock.	Dimensions of Wet Docks.				Entrance.			Extent of Quayage.		
	Area of Water Space.	Length.	Width.	Depth.	Depth over the Sill at Ordinary Springs.		Width.	Length only.		No. of Cranes.
					At High Water.	At Low Water.				
	Acres.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Miles. Feet.		
Kattendijk Dok.	32	3,116	459	23½	23	—	81	1 433	13	
Hout Dok	18½	1,640	459	27½	23	—	49	0 3,753	8	
Kempisch Dok	12½	1,148	494	27½	23	—	49	0 3,180	16	
Lefebvre Dok	30½	1,968	360-1148	36½	—	—	59	1 156	23	
Amerika Dok	18	1,394	607	36½	—	—	59	0 5,015	1	
Verbinding's Dok	4	259	164	19	23	—	59	0 557	—	
Asia Dok	14½	2,237	246	23	23	—	49	0 4,242	15	
Klein Dok	7½	433-672	141-556	19	23	8½	50	0 2,141	3	
Groot Dok	13¾	1,220	492	20½	20¾	—	59	0 3,203	13	
Bassin aux Briques	3	705	158	—	20¾	—	36	0 1,690	—	
„ des Batchiers.	4½	836	203	—	20¾	—	36	0 1,960	—	
„ des Charbons	2½	760	164	—	20½	—	36	0 1,960	—	
„ Intercalaire	68¾	—	—	30½	—	—	172	1 4,557	80	

The quays along the river Scheldt from the entrance of the New Dock extend southward for a distance of about 2½ miles.

Belgium—Antwerp (continued).

In addition to the above docks, two new basins, the Havendock and the Canal Dock, were opened to traffic in 1908. Their dimensions are together : Length of quay, 2,667 metres (8,745 ft.) ; surface of water, about 26,000 metres ; depth of water, 10.50 metres (34½ ft.). A new entrance from the river into the Lefebvre Dock, called the Royers Sluis, will be opened in 1909.

In the Asia Dock, spacious railway quays are made to discharge steamers loaded with ore at the rate of 300 tons daily ; and in the same dock another quay is adapted for loading coal by hydraulic cranes from the trucks.

In addition to the wet docks, there are four private dry docks, six city docks, and a floating dock, as follows :—

	is	400 ft. long,	41 ft. wide at the entrance,	17½ ft. on the sill.			
I. Cockerill's	is	250	41½	13	"	"	"
Cruybeke	"	251	29	8	"	"	"
Burght	"	330	40	14	"	"	"
Cales et Chantieres, No. 1	"	542	77	22½	"	"	"
City Docks, No. 1	"	229	39½	13	"	"	"
" " 2	"	159	32½	8½	"	"	"
" " 3	"	450	49	17	"	"	"
" " 4	"	450	49	17	"	"	"
" " 5	"	450	49	17	"	"	"
" " 6	"	460	82	21-23	"	"	"
Floating dock	"						

The length given is over all. The breadth is at the high water ordinary spring level, and the depth on the sill is at high water ordinary springs.

There are several private establishments where every description of repairs to steam or sailing vessels can be executed.

At No. 11 river quay an electric crane of 50 tons lifting power has been erected. At No. 71 Havendock, an electrical 30 ton crane is in course of construction.

All vessels going to Antwerp must, in compliance with the Customs law of Belgium, employ a broker for reporting, etc., no matter whether the ship be consigned or addressed to charterer's agents, under whatsoever clause of charter-party ; and as, in consequence, and by the established custom of the port, the broker is for account of the vessel, the owners or captains have to exercise their own free will as to the choice of such broker.

The entry of the ship and cargo is now made on arrival before the town (not, as formerly, down the river), and although the Custom House laws are still very severe, every facility is granted, particularly to steamers, which can load and discharge day and night if required. The ships can move during the night through all the docks, when special permission is asked beforehand ; they are docked and undocked every tide at high water, and after sunset the gates and part of the river are brilliantly lighted by electric lights.

The Belgian quarantine station is at Doel, about 15 miles below Antwerp. Here vessels coming from infected or suspected ports are subject either to quarantine or to an examination by the sanitary officers.

Time Signals.—Chronometers can be checked. Four circular discs are placed perpendicularly at five minutes before the signal on the tower of the Government building in the Zelinde corn market. The discs fall into a horizontal position at 1 hr. 0 min. 0 sec. Greenwich mean time, equal to 1 hr. 17 mins. 37 secs. local mean time.

Belgium—Antwerp (continued).

Pilotage.—Sea pilots: The regular stations are—in the English Channel, at Dungeness; in the North Sea, at the Wandelaar and the Schouwen Bank lightships. At these stations a pilot boat will always be found, but other cutters cruise further out, in the English Channel as far as St. Catherine's Point, and in the North Sea in the vicinity of the West Hinder lightship and at the Haaks. Beside the Belgian pilot-boats, Dutch pilots cruise out at the same stations; they are marked in the sail with the word *Vlissingen*, and the number of the boat underneath the word. They have a blue flag with a white star in the top. These pilots take the ship as far as Flushing, where a river pilot comes on board, either a Belgian or Dutch pilot. The Dutch river pilot takes the ship up to the Antwerp roads, where he has to be exchanged for a Belgian pilot to dock the ship. The entire river from Flushing up to the town is perfectly lighted, enabling the pilots to sail or steam up during the night. The charges are the same for Dutch or Belgian pilots. For details of these charges, see page 22.

Port Charges.—Quay Dues, for steamers discharging and loading at the quays on the riverside, or in the river (roads), are as follows:—

	Per register ton. Centimes.
For each of the first ten voyages	30
„ „ ten following voyages	20
„ later voyage	14

In order to be admitted to enjoy the privilege of the diminution, the voyages must have been made within the course of one year, commencing from the date of the first arrival of the steamer. Vessels belonging to regular lines admitted into the docks pay the same rates.

Vessels remaining in the roads without discharging or loading are exempt from any charges. The same applies to vessels bound up river, that are compelled to lighten, provided the lighters also go up river.

Towage.—1 fr. per reg. ton for petroleum or wood-laden ships, and 1s. per reg. ton for all other ships, Flushing to Antwerp and back to Flushing—assistance to the dock gates or to the quay inclusive.

A number of small tugs, belonging to the town, are continually under steam in the docks, from 6 o'clock in the morning until 7 o'clock at night, in order to move the ships at a small expense, varying from 2 fr. for towing crafts up to 100 tons from one dock into another up to 60 fr. for towing ships of 1,700 tons and larger through the largest space, from one end to the other of the docks.

Loading and Discharging.—Steamers of regular lines with general cargoes, about 1 fr. per ton. For use of baskets 15 c. per ton extra is charged. Steamers discharging grain, $4\frac{1}{2}d.$ per ton; steamers loading rails and other cargoes, 1s. per ton; sailing vessels discharging grain, $6d.$ per ton; for other cargo a bargain is usually made; for loading and stowing iron or other heavy goods, 1s. per ton is generally charged; for empty petroleum barrels, 5 fr. is charged for every 100 barrels.

Brokerage.—75 c. per ton, including reporting and clearing at the Custom House. Commission on outward cargo, 5 per cent. on amount of freight. A share is always returned to the owners and masters, also half of the reporting and clearing fees. Steamers are reported for £5; but if a guarantee

RATES OF PILOTAGE.

DRAUGHT OF WATER.		SUMMER RATES—From April 1 to September 30.										WINTER RATES—From October 1 to March 31.									
		From SEA to FLUSHING.		From FLUSHING to SEA.		From FLUSHING to ANTWERP or vice versa.		From SEA to FLUSHING.		From FLUSHING to SEA.		From SEA to FLUSHING.		From FLUSHING to SEA.		From FLUSHING to ANTWERP or vice versa.					
In Fathoms or Decimetres.	In English Feet.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.	Sailing Vessels.	Towed Vessels.
30	9 8	Fr. c. 45	Fr. c. 42	Fr. c. 30	Fr. c. 28	Fr. c. 60	Fr. c. 56	Fr. c. 60	Fr. c. 57	Fr. c. 33	Fr. c. 31	Fr. c. 60	Fr. c. 57	Fr. c. 33	Fr. c. 31	Fr. c. 64	Fr. c. 60	Fr. c. 64	Fr. c. 60	Fr. c. 64	Fr. c. 60
31	10 2	49	46	32	30	62	58	62	58	36	34	66	61	37	35	68	64	68	64	68	64
32	10 5	54	50	33	31	64	60	64	60	37	35	66	62	38	36	71	67	71	67	71	67
33	10 9	58	54	35	33	68	64	68	64	39	37	70	66	40	38	73	69	73	69	73	69
34	11 2	62	58	37	34	71	67	71	67	41	39	73	69	42	40	76	72	76	72	76	72
35	11 6	66	62	38	36	73	69	73	69	43	41	75	71	44	42	78	74	78	74	78	74
36	11 9	71	66	41	38	76	72	76	72	45	43	78	74	46	44	81	77	81	77	81	77
37	12 2	75	70	44	41	82	78	82	78	48	46	84	80	49	47	85	81	85	81	85	81
38	12 6	79	74	46	43	86	82	86	82	50	48	88	84	51	49	88	84	88	84	88	84
39	13 1	84	79	49	46	88	84	88	84	52	50	90	86	53	51	90	86	90	86	90	86
40	13 4	89	83	51	48	91	87	91	87	54	52	92	88	55	53	92	88	92	88	92	88
41	13 8	93	87	53	50	93	89	93	89	56	54	94	90	57	55	94	90	94	90	94	90
42	14 1	108	103	59	56	103	99	103	99	60	58	105	101	61	59	105	101	105	101	105	101
43	14 4	116	111	63	60	111	106	111	106	63	61	113	109	64	62	113	109	113	109	113	109
44	14 8	125	120	67	64	118	113	118	113	66	64	120	116	67	65	120	116	120	116	120	116
45	15 1	135	130	72	69	126	121	126	121	69	67	128	124	70	68	128	124	128	124	128	124
46	15 4	145	140	77	74	131	126	131	126	72	70	133	129	73	71	133	129	133	129	133	129
47	15 8	155	150	81	78	136	131	136	131	75	73	138	134	76	74	138	134	138	134	138	134
48	16 1	165	160	84	81	138	134	138	134	77	75	140	136	78	76	140	136	140	136	140	136
49	16 4	175	170	88	85	141	137	141	137	79	77	142	138	80	78	142	138	142	138	142	138
50	16 8	182	177	90	87	142	138	142	138	81	79	143	139	82	80	143	139	143	139	143	139
51	17 1	216	210	101	98	145	141	145	141	83	81	145	141	84	82	145	141	145	141	145	141
52	17 4	223	218	102	99	146	142	146	142	84	82	146	142	85	83	146	142	146	142	146	142
53	17 8	230	225	106	103	147	143	147	143	85	83	147	143	86	84	147	143	147	143	147	143
54	18 1	247	242	108	105	148	144	148	144	86	84	148	144	87	85	148	144	148	144	148	144
55	18 4	264	259	111	108	149	145	149	145	88	86	149	145	89	87	149	145	149	145	149	145
56	18 8	304	300	123	120	151	147	151	147	90	88	151	147	91	89	151	147	151	147	151	147
57	19 1	330	326	128	125	152	148	152	148	91	89	152	148	92	90	152	148	152	148	152	148
58	19 4	355	351	133	130	153	149	153	149	92	90	153	149	93	91	153	149	153	149	153	149
59	19 8	389	385	138	135	154	150	154	150	93	91	154	150	94	92	154	150	154	150	154	150
60	20 1	423	419	143	140	155	151	155	151	94	92	155	151	95	93	155	151	155	151	155	151
For every palm draught more		25	23	20	19	7	6	33	31	20	19	33	31	20	19	33	31	33	31	33	31

Steamers under their own steam enjoy a further reduction, which is in about the same proportion as that between ships under sail or towed. The limited amount of space at our disposal prevents us giving the exact tariff.

Belgium—Antwerp (*continued*).

for freight is required, $2\frac{1}{2}$ per cent. is allowed for collecting the same. The necessary cash advances for paying off the crew, etc., are made free of charge.

Dock Dues.—50 c. per ton. Same for steamers or sailing vessels of all nations.

Ballast, delivered by the Town Authority.—Wet sand ballast is brought alongside in lighters, and costs 2 fr. 25 c. per last of nearly 2 tons in the docks, and 2 fr. 10 c. in the river, all with 15 per cent. additional. The lighters are discharged by the ship's crew, or by labourers paid by the master.

When receiving such ballast on board, it should be ascertained that the hold of the lighter has been pumped clear, and that it is laden up to the water-line, else the master may refuse the acceptance of the ballast.

Private Dry Ballast is also brought alongside in lighters, and put into the ship's hold, at the rate of 3 fr. per 1,000 kilos.

DRY DOCK RATES.

Tonnage of the Vessels.	For Vessels entering and leaving the Docks within 24 hours.	For Two Days' Stay. Daily.	For the Three First Days of Stay. Daily.	For each following Day.
	Fr.	Fr.	Fr.	Fr.
85 tons and less . . .	70	50	45	25
86 " to 128 tons . . .	105	70	60	30
129 " " 171 " . . .	140	85	80	33
172 " " 214 " . . .	175	95	90	36
215 " " 257 " . . .	180	105	100	39
258 " " 300 " . . .	210	120	115	41
301 " " 342 " . . .	240	135	130	44
343 " " 385 " . . .	270	145	140	47
386 " " 428 " . . .	300	160	150	50
429 " " 514 " . . .	360	190	176	54
515 " " 599 " . . .	420	220	203	58
600 " " 685 " . . .	480	250	229	62
686 " " 771 " . . .	540	280	255	66
772 " " 856 " . . .	600	310	283	70
857 " " 942 " . . .	660	340	297	77
943 " " 1,027 " . . .	720	370	311	84
1,028 " " 1,113 " . . .	780	400	324	91
1,114 " " 1,199 " . . .	840	430	337	98
1,200 " " 1,284 " . . .	900	460	350	105
1,285 " " 1,370 " . . .	940	480	367	108
1,371 " " 1,455 " . . .	980	500	384	111
1,456 " " 1,541 " . . .	1,020	520	401	114
1,542 " " 1,627 " . . .	1,060	540	417	117
1,628 " " 1,712 " . . .	1,100	560	433	120
For each 85 tons above this figure	40	25	20	5

Continuing in same proportion upwards. However, after the fourteenth day, the tariff is double the price of the last eleven days.

Noting Protest, and appointing surveyors at the Tribunal of Commerce, varying from 30 to 40 fr.

Port Warden's Survey.—Inwards, for examining the hatches, and daily attendance during the whole time of discharging :—

Belgium—Antwerp (*continued*).

Vessels up to 300 tons	Fr.
„ 301 to 600 „	12
„ 601 to 900 „	25
„ 901 to 1,200 „	40
„ 1,201 to 1,500 „	55
„ 1,501 to 2,000 „	70
„ 2,001 to 3,000 „	80
„ 3,001 and above	90
	100

The discharging of vessels is under the superintendence of seven nautical experts. For vessels up to 3,000 tons, if half the cargo is discharged, half the price is charged ; for vessels over 3,000 tons the reduction of one half is only made when the discharge is under 3,000 tons.

Loading and Discharging Regulations.—In 1905, the municipal authorities of Antwerp decided that the time appointed for vessels visiting the port to load and discharge their cargoes should be shortened ; and to this end a regulation was passed, determining the amount of merchandise to be loaded or discharged each day by vessels using the quays and docks.

The regulation, which supplants or modifies all previous rules, states as follows : Every shipmaster, at the time of the entry of his vessel into the docks, shall inform the chief dock official of the name, nationality, draught, cargo, port of departure, owner, and broker or agent of his vessel. For vessels mooring alongside the quays of the Scheldt the above declaration shall be made to the official appointed by the harbour master.

The master, through his broker or agent, shall request of the harbour master a berth at which to load or discharge his cargo ; this form of request shall furnish particulars as to the weight (in tons of 1,000 kilos.) of the merchandise to be loaded or discharged. In the event of the master being unable at the time to furnish the information required, he shall pledge himself in writing, through his agent or broker, to furnish the necessary particulars to the harbour master at a later date. If the information is not forthcoming within three days after the departure of the vessel, the master shall be liable to a fine of 25 fr. No vessel can obtain berthing space without the presentation of the document referred to. Any false declaration made to the port official will be considered as an attempt to defraud, for which the offender shall be liable to a fine payable to the municipality, amounting to one-half of the port dues required to be paid by the vessel in respect of the cargo of which a false declaration has been made. The broker or agent of the master will be held responsible for the payment of the fine imposed, even after the vessel's departure.

The weight of the goods to be loaded or discharged shall determine the time during which a vessel will be allowed to occupy the berth assigned to it.

This time is calculated in accordance with the following tables. The time is calculated from midday if the vessel has been moored during the morning, or, if moored during the afternoon, it is reckoned from the following day.

Belgium—Antwerp (continued).

QUANTITIES OF GENERAL MERCHANDISE TO BE LOADED AND DISCHARGED TO OR FROM VESSELS AT THE QUAYS OR DOCKS PER DAY.

Cargo in Tons of 1,000 Kilos.	SAILING SHIPS.				Cargo in Tons of 1,000 Kilos.	STEAMERS.			
	Loaded.		Discharged.			Loaded.		Discharged.	
	Summer.	Winter.	Summer.	Winter.		Summer.	Winter.	Summer.	Winter.
	Tons.	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.	Tons.
160 tons .	35	25	55	45	200 tons.	70	60	100	85
320 " .	40	30	65	55	400 " .	80	75	160	140
480 " .	45	35	80	65	600 " .	95	90	200	175
640 " .	50	40	95	75	800 " .	125	100	235	200
800 " .	55	45	100	85	1,000 " .	150	125	250	215
960 " .	60	50	110	90	1,200 " .	170	150	280	240
1,120 " .	70	60	120	110	1,400 " .	180	160	290	250
1,280 " .	75	65	135	120	1,600 " .	190	170	320	260
1,440 " .	80	70	150	135	1,800 " .	205	190	330	270
1,600 " .	85	75	165	150	2,000 " .	220	205	350	290
1,760 " .	90	80	170	155	2,200 " .	230	215	360	300
1,920 " .	95	85	180	160	2,400 " .	250	225	370	310
2,080 " .	100	90	195	170	2,600 " .	280	235	380	320
2,240 " .	105	95	200	175	2,800 " .	300	240	400	350
2,400 " .	110	100	210	180	3,000 " .	310	245	410	360
2,560 " .	115	105	215	185	3,200 " .	315	250	420	370
2,720 " .	120	110	220	190	3,400 " .	325	260	430	380
2,880 " .	125	115	225	200	3,600 " .	330	265	450	400
3,040 " .	130	120	235	215	3,800 " .	335	275	455	410
3,200 " .	140	130	250	230	4,000 " .	340	280	460	415
3,360 " .	145	135	260	235	4,200 " .	360	300	465	420
3,520 " .	150	140	270	240	4,400 " .	375	310	480	430
3,680 " .	155	145	275	245	4,600 " .	385	320	490	440
3,840 " .	160	150	280	250	4,800 " .	400	330	500	450
4,000 " .	165	155	285	255	5,000 " .	420	350	510	460
4,160 " .	170	160	300	270	5,200 " .	440	360	530	480
4,320 " .	175	165	305	275	5,400 " .	450	365	540	490
4,480 " .	180	170	310	280	5,600 " .	460	370	550	500
4,640 " .	185	175	315	285	Over . .	470	375	—	—
4,800 " .	190	180	3 0	290	6,001 to				
4,960 " .	195	185	325	295	11,200tons	—	—	600	530
5,120 " .	200	190	330	300	Over 11,200				
5,280 " .	205	195	335	305	tons. .	—	—	750	700
Over . .	210	200	340	310					

TIME ALLOWED FOR DISCHARGING IN WINTER AND SUMMER.

STEAMERS AND SAILING VESSELS CARRYING TIMBER, QUEBRACHO WOOD, DYE
WOODS AND ROOTS.

	Quantity.	Remarks.
	Standards.	
Timber—		
By steamers	2½	) Per hour from each hatchway or deck load. Discharging to be carried out regularly and uninterruptedly, in accordance with the instructions of the harbour master.
" sailing vessels	2	
Quebracho, dye woods and roots. .	—	

Belgium—Antwerp (continued).

STEAMERS CARRYING MINERALS.

Cargo in Tons of 1,000 Kilos.	Quantity to be discharged per Day.		Cargo in Tons of 1,000 Kilos.	Quantity to be discharged per Day.	
	Zinc and Lead.	All other Minerals.		Zinc and Lead.	All other Minerals.
	Tons.	Tons.		Tons.	Tons.
200 tons	125	160	3,200 tons	420	525
400	180	200	3,400	440	550
600	200	225	3,600	470	585
800	230	250	3,800	480	600
1,000	270	325	4,000	490	615
1,200	290	350	4,200	500	625
1,400	300	375	4,400	520	650
1,600	310	385	4,600	530	665
1,800	330	415	4,800	540	675
2,000	340	425	5,000	560	700
2,200	350	440	5,200	570	715
2,400	360	450	5,400	580	725
2,600	370	465	5,600	590	740
2,800	390	485	And upwards	600	750
3,000	400	500			

SAILING VESSELS CARRYING GRAIN AND SEEDS, NITRATES AND HIDES.

Cargo in Tons of 1,000 Kilos.	Quantity to be discharged per Day.			Cargo in Tons of 1,000 Kilos.	Quantity to be discharged per Day.		
	Hides.	Grain and Seeds.	Nitrates.		Hides.	Grain and Seeds.	Nitrates.
	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.
160 tons	25	60	100	2,880 tons	—	150	135
320	37	60	100	3,040	—	150	135
480	41	60	100	3,200	—	155	140
640	43	60	100	3,360	—	155	145
800	47	75	100	3,520	—	155	150
960	50	95	100	3,680	—	155	160
1,120	53	100	110	3,840	—	160	160
1,280	55	100	110	4,000	—	160	165
1,440	55	105	110	4,160	—	160	170
1,600	58*	105	110	4,320	—	160	175
1,760	—	120	115	4,480	—	160	175
1,920	—	120	115	4,640	—	165	180
2,080	—	145	120	4,800	—	165	185
2,240	—	150	125	4,960	—	165	185
2,400	—	150	125	5,120	—	165	190
2,560	—	150	130	5,280	—	170	195
2,720	—	150	130	And upwards	—	175	200

* Upwards of 1,600 tons weight, 58 tons per day.

Pro Forma Charges on a steamer of 1,804 net reg. tons, with 4,800 tons of grain from the Danube, and out in water ballast :—

	£	s.	d.
Sea and river pilotage inwards, 65 decimetres (winter £32 10s. 11d), summer	27	7	8
River and sea pilotage outwards, 36 decimetres (winter £4 9s. 2d.), summer	4	1	7
Noting and extending protest	0	14	3
Manifest at the Customs	1	0	0
Customs pass and measuring ship	0	12	6
Carried forward	£33	16	0

Brought Forward	£	s.	d.
Dock dues, 2,245 tons at 50 c. per ton	33	16	0
Water bailiff's bill	44	10	11
Clearance from quarantine	1	4	7
Dock pilot for taking vessel into and out of dock	0	11	11
Movement charges	3	10	0
Opening hatches by surveyors	0	4	0
Surveying delivery of cargo and checking weight, 4,800 units at $\frac{1}{4}$ d. per unit, plus 5 per cent. insurance	3	11	5
Stevedore's account, 4,800 units at $\frac{1}{4}$ d. per unit, plus 5 per cent. insurance	15	15	0
Reporting at Customs and clearing	84	0	0
Advertising	5	5	0
Towage in dock, about	0	5	0
Towage in river	5	0	0
Translation of sea protest	8	0	0
Flushing account	0	8	0
Boatman meeting steamer in the roads	0	4	3
Messurers' certificates	0	12	6
Harbour rules	0	4	0
Labour tax, $\frac{1}{2}$ per cent. on discharging	0	0	10
Strike fund, $2\frac{1}{2}$ per cent. on discharging	0	8	0
	2	0	0
	<hr/>		
	£209	11	5

Pro Forma Charges on a steamer of 1,070 net reg. tons, with 2,200 tons of ore, outwards in water ballast :—

Sea and river pilotage, inwards, 60 decimetres (Winter £26 17s. 4d.),	£	s.	d.
Summer	21	19	7
River and sea pilotage, outwards, 33 decimetres (Winter £3 18s. 2d.),			
Summer	3	11	11
Manifest at the Customs	1	0	0
Customs pass and measuring ship	0	12	6
Dock dues, 1,274 tons at 50 c. per ton	25	5	7
Water bailiff's bill	1	1	5
Dock pilot for taking vessel into and out of dock	2	10	0
Movement charges	0	4	0
Surveying delivery of cargo and checking weight, 2,200 tons at $\frac{1}{4}$ d., plus 5 per cent. insurance	7	4	4
Discharging 2,200 tons at 1s. per ton, plus 5 per cent. insurance, as per charter-party	115	10	0
Reporting at Customs and clearing	5	5	0
Advertising	0	5	0
Towage in dock, about	4	10	0
Flushing account	0	4	3
Boatman meeting steamer in the roads	0	12	6
Harbour rules	0	0	10
Crane dues	6	0	0
Labour tax, $\frac{1}{2}$ per cent. on discharging	0	11	0
Strike fund, $2\frac{1}{2}$ per cent. on discharging	2	15	0
	<hr/>		
	£199	2	11

Pro Forma Charges on a sailing ship of 1,600 net reg. tons, with 2,500 tons of nitrate, outwards cement cargo to California :—

Sea and river pilotage, inwards, 66 decimetres (winter £37 15s. 6d.),	£	s.	d.
summer	30	12	4
River and sea pilotage, outwards, 66 decimetres (winter £26 7s. 5d.),			
summer	25	2	0
Noting and extending protest	1	4	3
Manifest at the Customs	1	0	0
Customs pass and measuring ship	0	12	6
Dock dues, 1,675 tons at 50 c. per ton	33	4	9
Water bailiff's bill	1	5	0
Clearance from quarantine	0	11	11

Carried forward £93 12 9

Belgium—Antwerp (*continued*).

	£	s.	d.
Brought forward	93	12	9
Bill of health (Belgian)	0	4	0
Bill of health (United States of America)	1	0	8
Dock pilot for taking vessel into and out of dock	3	10	0
Movement charges, about	0	10	0
Opening hatches by surveyors	3	3	6
Surveying delivery, 2,500 tons nitrate at $\frac{3}{4}$ d. per ton, plus 5 per cent. insurance	8	4	1
Checking cargo cement, 2,500 tons at 10 c. per 1,000 kilos., plus 5 per cent. insurance	10	11	6
Stevedore's account, 2,500 tons nitrate at $5\frac{1}{2}$ d. per ton, plus 5 per cent. insurance	60	3	1
Stevedore's account, 2,500 tons cement at 80 c. per 1,000 kilos., plus 5 per cent. insurance	84	11	8
Reporting at Customs and clearing in and out	10	10	0
Advertising	0	5	0
Towage in dock, about	10	0	0
Towage from sea to Antwerp and back to sea (not contracted 3s. per net reg. ton), contracted 1 fr. per net reg. ton	63	8	10
Translation of sea protests	0	8	0
Flushing account	0	4	3
Boatman meeting vessel in the roads	0	12	6
Harbour rules	0	0	10
Labour tax, $\frac{1}{2}$ per cent. on £57 5s. 10d.	0	5	9
Labour tax, $\frac{1}{2}$ per cent. on £80 11s. 2d.	0	8	1
Strike fund, $2\frac{1}{2}$ per cent. on £57 5s. 10d.	1	8	8
Strike fund, $2\frac{1}{2}$ per cent. on £80 11s. 2d.	2	0	3
	£355	3	5

BLANKENBERGHE.

Blankenberghe, in lat. $51^{\circ}19'$ N., long. $3^{\circ}8'$ E., is about $8\frac{1}{2}$ miles to the N.E. of Ostend.

Accommodation.—In the channel and on the bar there is 2 ft. to 3 ft. of water at low tide. Springs rise 13 ft., and neaps 10 ft. There is a wet dock 835 ft. long, 328 ft. wide, and 14 ft. deep, with 2,230 ft. of quayage. This is a fishing port.

BRUGES.

(See **Zee-Brugge and Bruges**, p. 35.)

BRUSSELS.

Brussels is in lat. $50^{\circ}50'$ N., long. $4^{\circ}20'$ E.

Population.—623,041.

Imports.—Biscuits, preserved goods, cement, wine, timber, cheese, cotton goods, wood, etc.

Exports.—Plate and window glass, iron, sugar, marble, glassware, candles, nails, etc.

Accommodation.—Brussels is connected with Boom by a canal, with a depth sufficient to enable vessels drawing not more than 10 ft. to get up to the city. At Boom the canal enters the river leading to Antwerp, in which there is sufficient water for all ordinary vessels. Boom is sometimes known as Willebroeck.

Vessels of the following size can go up to Brussels: Length 134 ft. 6 in., breadth 23 ft. 9 in.; draught of water, 10 ft. Those of 165 ft. in length can go in the canal and leave same at slack tide in the Rupel and in the inferior section (5th) of the canal.

The dock accommodation is as follows:—

Belgium—Brussels (continued).

First dock (Premier Bassin); length of dock (mean), 606 ft. ; width, 180 ft. ; width of entrance, 26 ft. ; depth of water in dock, 10 ft.

Second dock (Deuxième Bassin); length of dock, 721 ft. ; width, 98 ft. ; width of entrance, 26 ft. ; depth of water in dock, 9 ft. 8 in.

Third dock (Troisième Bassin); length of dock, 918 ft. ; width, 66 ft. ; width of entrance, 26 ft. ; depth of water in dock, 6 ft. 6 in.

Fourth dock (Quatrième Bassin); length of dock, 754 ft. ; width, 66 ft. ; width of entrance, 21 ft. 6 in. ; depth of water in dock, 6 ft. 6 in.

Bassin Vergote; length of dock, 3,100 ft. ; width, 394 ft. ; width of entrance, 59 ft. ; depth of water in dock, 21 ft. 4 in.

Bassin Batelage (Ouest); length of dock, 2,392 ft. ; width, 115-164 ft. ; width of entrance, 39 ft. ; depth of water in dock, 11 ft. 6 in.

There are three cranes, one electric with a capacity of 20,000 kilos., and two ordinary cranes with a capacity of 10,000 and 1,500 kilos. respectively.

Three English steamers leave London weekly for Brussels direct, and leave Brussels for London every four days.

Vessels bound for Brussels must pass the Customs at Lillo, a short distance before arriving at Antwerp; occasionally they also receive medical visits. They must also make a Custom House entry at Antwerp, and declare their cargo on arriving at Brussels.

Pilotage.—Vessels must take a pilot at Flushing as far as Antwerp, the charges for vessels bound for Brussels are the same as for those bound for Antwerp. At Antwerp another pilot comes on board, and the one from Flushing leaves the vessel; he conducts the ship as far as the entrance to the canal at Boom or Willebroeck. The pilotage fees from Antwerp to the canal are as follows :—

Draught in Palms.	SUMMER.			WINTER.		
	Sailing Ships.	Vessels Towed.	Steamers.	Sailing Ships.	Vessels Towed.	Steamers.
15	Fr. c. 9 50	Fr. c. 9 00	Fr. c. 8 00	Fr. c. 11 00	Fr. c. 10 50	Fr. c. 9 50
20	13 50	12 50	12 00	15 00	14 00	13 50
25	17 50	16 50	15 50	19 00	18 00	17 00
30	22 00	21 00	19 50	24 00	22 50	21 00
35	26 00	25 00	23 00	28 00	26 00	24 50

The pilotage from the entrance to the canal to Brussels is 12 fr. The distance between Antwerp and Boom is about 11 miles; from Boom to Brussels about 17 miles. Vessels can be towed from the entrance to the canal to Brussels in about 7 hours.

Port Charges.—Canal Dues:—Vessels carrying cargo, 30 c. per cubic ton: vessels in ballast, 10 c. per cubic ton. (This charge on cargo is reduced to 17 c. for vessels having a regular service between Brussels and a foreign port.) **Ballast:**—About 75 c. per ton. **Brokerage:**—5 per cent. on outward charters. **Charges for use of Cranes:**—Electric crane, capacity 20,000 kilos., 6 fr. per hour, 3 fr. per half-hour or part of it. Ordinary crane, capacity 10,000 kilos., 2 fr. per hour; ordinary crane, capacity 1,500 kilos., 1 fr. per hour. There are no dock, wharf, or light dues.

Belgium.

GHEENT.

Ghent, in lat. 51°3' N., long. 3°42' E., is the first manufacturing town in Belgium.

Population.—163,079.

Imports.—Wood, cotton, flax, colonial produce, machinery, manufactured goods, pig-iron, copper, tin, creosote, guano, coal, salt, etc.

Exports.—Manufactured cotton and linen, jute, fruit, plants, flax, marble, chicory, rags, oak bark, refined sugar, bran, coal, cement, phosphates, tiles, slates, paving stones, etc.

Accommodation.—Ghent is connected with the sea by the canal which enters the Wester Scheldt at Terneuzen. The bridges and sluices have a breadth of 40 ft. and more. All vessels up to 295 ft. in length, and 38 ft. beam, and not exceeding a draught of about 17 ft. neap and about 19 ft. spring tides, can enter the lock at the entrance to the canal and steam right up to Ghent throughout the whole year. The above mentioned canal is 183 ft. broad at water level, and offers every security over its short extent of 30 kilometres (19 miles). It is open both night and day, and navigation thereon is entirely free. A new lock is now ready at the entrance to the canal at Terneuzen, having a length of 490 ft., 60 ft. breadth, and 24 to 26 ft. draught, according to tides, which will be used as soon as the canal works now (1908) in progress are achieved, viz., at end of 1909. When the works are completed, the canal being widened to 219 ft. and deepened to 28.8 ft., wider bridges built, and electric light fitted on both banks, practically any size steamers will be able to steam right up to Ghent, night and day, in every security. In order to facilitate the trade generally, the authorities have decided that ships not exceeding the following dimensions, provisionally, will be allowed to pass the new sluice and steam or be towed up to Ghent from the beginning of October, 1908:—

Length	.	.	.	.	.	.	367	ft. (English), 120 metres.
Breadth	.	.	.	.	.	.	48	ft. (English), 14.63 metres.
Draught	.	.	.	.	.	.	21.3	ft. (English), 6.50 metres.

For the greater convenience of the shipping traffic between Ghent and the interior of Belgium, France, Germany and Switzerland, the Belgian State Railway wagons are placed alongside ships all along the docks. Goods are also barged to and from any place on the Rhine, Brussels, Lille, Roubaix, Paris, Antwerp, Liège, Ostend. At Ghent Fore-haven there are large warehouses for the storage of grain, cotton, etc., and this part of the harbour is fitted with powerful electric cranes, as well as the old docks. The Old Dock and Timber Dock have 18.8 ft. draught; the Avant Port (Fore-haven), 21 ft.; and the New Dock, opened since August, 1904, 26.4 ft. Warehouses have also been erected here, and the quayage is fitted with powerful steam cranes. Five new basins are in course of construction, and will be finished towards 1910, which will more than double the extent of the quayage now existing.

The dimensions of wet docks are as follows:—

Avant Port (situated on the Ghent-Terneuzen Canal).—Length, 3,606 ft.; width, 295 ft.; length of quayage, 3,606 ft.; depth of water alongside, 20 ft. 11 in. Eight steam cranes to lift 2 tons, and one steam crane to lift 25 tons.

Belgium—Ghent (continued).

Bassin du Commerce.—Quayage: Left bank—length of quayage, 2,623 ft.; depth of water alongside, 18 ft. 8 in. Right bank—Length of quayage, 2,950 ft.; depth of water alongside, 18 ft. 8 in.; width of entrance, 55 ft. 9 in.; width of dock, 360 ft. Three hydraulic cranes capable of lifting $1\frac{1}{2}$ tons, eight steam cranes to lift 2 tons, one other crane to lift 15 tons.

Bassin au Bois (Timber Dock).—Length of dock, 754 ft.; width of dock, 409 ft.; depth of water in dock, 18 ft. 8 in.

Bassin du Tolhuis.—Length, 1,311 ft.; width (middle), 393 ft.; depth of water, 20 ft. 11 in.

New Dock.—Length, 6,557 ft.; width, 590 ft.; depth, 26 ft. 4 in.; length of quayage, 6,557 ft.

Bassin Darse.—Length, 1,639 ft.; width, 459 ft.; depth, 26 ft. 4 in.; length of quayage, 3,278 ft.

There are two dry or graving docks, the dimensions being as follows:—

No. 1. Length, 426 ft.; breadth, $42\frac{3}{4}$ ft.; depth on the sill, 18 ft.

No. 2. Length, 249 ft.; breadth, 36 ft.; depth on the sill, 15 ft.

The measurements given are length over all, breadth at high water ordinary spring level, depth at high water ordinary springs.

Dispatch.—Good dispatch can be obtained on cargoes of any description; loading and discharging deadweight cargoes 500 to 600 tons during ordinary working hours, 75 to 125 stds. of sawn wood, 100 to 150 fathoms of round wood, according to nature of cargo and season.

Pilotage.—Canal pilotage from Terneuzen to Ghent, and vice versa, 40 to 60 fr. Not compulsory,

Port Charges.—Dock Dues:—35 c. per reg. ton. **Ballast:**—60 c. per ton; as stiffening, 1 fr. 75 c. to 2 fr. per ton. The legal clearance fee for sailers and steamers is $37\frac{1}{2}$ c. per net reg. ton, but less can be arranged by agreement, provided not otherwise addressed by charter.

Pro Forma Charges, on a steamer arriving with a cargo of 800 stds. of deals, and leaving in ballast:—

	Fr.	c.
Water bailiff	18	00
Sea pilot in (summer rate)	249	97
Sea pilot out " "	56	10
Bridge and sluice money up and down canal	25	00
Dock dues	401	81
Inward manifest	5	00
Clearance (1 per cent. on freight as per agreement)	240	00
Stevedoring 800 stds. of deals at 2.25 fr.	1800	00
Labourers insurance 5 per cent. on 1800 fr.	90	00
Flushing account (reporting passage)	1	75
Terneuzen account (clearance, pilotage up and down canal, etc.)	130	00
Selzaete account (clearing frontier in and out)	35	00
Telegrams and postage	27	50

3080 13 = £122 1s. 9d.

LOUVAIN.

Louvain, in lat. $50^{\circ}52'N.$, long. $4^{\circ}40'E.$, is situate on the Dyle.

Population.—42,146.

Exports.—Potatoes, bark, iron, coal, phosphate, tiles, etc.

Accommodation.—Louvain is connected with Antwerp by a canal about 22 miles long, passing through Malines (Mechlin). The depth of

Belgium—Louvain (*continued*).

water is 11 ft. 4 in., and the breadth of the sluices is 26 ft. 2½ in., length 173 ft.

Masters of vessels bound for Louvain must make their Custom House entry at Antwerp.

Pilotage.—A pilot must be taken at Antwerp to bring vessel to Louvain.

Pro Forma Charges on a vessel of 100 tons (Belgian) coming in and going out with cargo :—

	Fr.	c.
Canal dues	60	00
Towage up and down	65	00
Pilot, up and down (if wanted).	26	00
Clearance	37	50
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	188	50 = £7 9s. 6d.

Pro Forma Charges on a vessel of 100 tons (Belgian) coming in loaded and going out empty :—

	Fr.	c.
Canal dues	40	50
Towage	56	00
Pilot	26	00
Clearance	37	50
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	160	00 = £6 6s. 10d.

NIEUPOORT.

Nieuport is in lat. 51°8' N., long. 2°45' E.

Imports.—Coal, timber, slates, etc.

Exports.—Grain, fruit, hay, straw, bricks.

Accommodation.—Nieuport Harbour is formed by two piers, and is about 10 miles S.W. of Ostend. There is a depth on the bar of 20 ft. at high water spring tides, and 17 ft. at neaps. There is a dock where vessels can always lie afloat, available for those drawing 18 ft. at neap tides and 20 ft. at springs.

Nieuport is connected by canals with Ostend, Bruges, Ypres, and Dunkirk, and by railway with the whole country.

Pilotage.—A pilot cutter is always out, with Nieuport painted in black letters on the sail, and carrying a blue flag with N. in white. Vessels can always have a pilot from the shore.

Port Charges.—**Town Dues** :—20 c. per reg. ton. **Dock Dues** :—25 c. per ton. **Labour** :—2 fr. 50 c. per man per day. **Sand Ballast** :—1 fr. per ton, delivered on board. **Brokerage** :—As per agreement.

OSTEND.

Ostend, in lat. 51°14' N., long. 2°55' E., ranks second in importance among the Belgian ports.

Population.—41,846.

Imports.—Coal, salt, timber, soda nitrate, grain, colonial produce, manufactured goods, guano, etc.

Exports.—Corn, clover seed, cattle, fruit, potatoes, flax, rabbits, eggs, stones, bricks, etc.

Belgium—Ostend (continued).

Accommodation.—The harbour is artificial, and has been much improved of late years. By dredging the bar has been removed. Vessels drawing 21 to 22 ft. can enter the outer harbour, where they lie safely, always afloat. The new docks are now open to vessels; the entrance lock is 390 ft. in length, 58 ft. in breadth, and has a depth at low water ordinary springs of 15 ft., and at high water ordinary spring tides of 30 ft.

A deep water channel has been cut through the Stroom Bank, N.W. of the pier heads, enabling vessels drawing 18 ft. to enter the harbour at low water. At the present time vessels drawing 26 ft. can always enter at high water neap tides; vessels drawing 30 ft. can enter at high water spring tides.

The tidal harbour has 1,148 ft. of quayage for merchant vessels and 574 ft. for Government vessels.

The **Old Lock** gives entrance to the First and Second Docks. The length is 180 ft.; width, 38 ft.; depth on the sill at ordinary spring tides, 18 ft.; and at ordinary neaps, 15 ft.

First Dock.—Length, 918 ft.; width, 197 ft.; length of quayage, 2,164 ft.; length of lock, 192 ft.; width of entrance, 38 ft.; depth in the dock, 18 ft. There is a crane to lift 10 tons, and a pair of sheers.

Second Dock.—Length, 557 ft.; width, 328 ft.; length of quayage, 1,574 ft.; width of entrance, 38 ft.; depth in the dock, 15 ft.

Timber Dock.—Length, 459 ft.; width, 312 ft.; width of entrance, 32 ft.; depth in the dock, 12 ft. There are no quays. There is a tidal fishing harbour with 2,033 ft. of quayage.

New Deep Water Quay.—Length, 2,800 ft.; depth alongside at low water, 24 ft.; depth alongside at high water, 38 ft. There are seven $1\frac{1}{2}$ ton cranes, two 20 ton cranes, and one 50 ton crane.

New Dock.—Length, 2,500 ft.; width, 300 ft.; length of quay, 5,000 ft.; width of entrance, 58 ft.; depth in the dock, 28 ft. There are twelve movable electric cranes, one 50 ton, two 20 ton, and nine others.

New Timber Dock.—Length of quayage, 4,500 ft.; depth of water, 24 ft.

Pilotage.—**Pilotage Dues.**—The figures are given in francs.

Draught in Deci- metres.	Draught in English Feet.	Sailing Vessels.				Towed Vessels.				Steamers.			
		Winter.		Summer.		Winter.		Summer.		Winter.		Summer.	
		In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.	In.	Out.
15	5	24	17	20	14	22	16	19	14	21	15	18	13
20	6·8	30	22	25	18	29	20	24	17	27	19	22	16
25	8·4	41	29	36	25	38	27	30	24	36	25	31	22
30	10·0	59	42	51	36	56	36	48	33	52	36	44	31
35	11·8	76	54	68	48	71	50	64	45	67	47	59	42
40	13·4	93	65	85	60	87	61	79	56	81	57	74	52
45	15·0	115	81	105	74	108	76	98	69	101	71	92	64
50	16·8	135	95	125	80	127	89	117	83	119	83	110	77
55	18·4	159	112	149	104	149	103	140	98	130	98	130	91

5 fr. for every 4 in. above 18 ft.

Vessels calling and not performing any commercial operation pay half the above.

Port Charges.—**Towage:**—2*d.* per ton for the first hour or fraction of an hour; 1*d.* per ton for second and every other hour or fraction of

Belgium—Ostend (*continued*).

an hour. Moving in harbour or docking, 5*d.* per register ton; boatmen assistance, as per agreement, usually £1 for large vessels and 10*s.* for small ones; 10*s.* per tide for extra work.

Vessels using the harbour tow rope pay for this, if less than 100 tons, 8*s.*; 100 tons and less than 200 tons, 12*s.*; 200 tons and less than 400 tons, 16*s.*; 400 tons and above, 20*s.*; and 4*s.* extra for second and every other hour or fraction of an hour.

Vessels in the roads requiring a tug must hoist two flags, one above the other, at the mast head.

Sluice Dues.—5*s.* 4*d.* per 100 tons, in and out; fishermen, 1*s.* 9*d.*

Dock Dues.—3*d.* per ton register; when calling only with cargo or in ballast, 10 c. per ton (Moorsom). For more than 24 hours' stay, an additional 3 per cent. on the dock dues is charged to cover the cost of lighting the quays and docks.

Sea Police.—Inspection in, 4*s.* 10*d.*; inspection out, 1*s.* 7*d.*; ship's roll, 10*d.*; every man, 5*d.*; stamp 5*d.*

Ballast.—Dry sand ballast can be had at 1*s.* per ton, f.o.b. Good sound bricks can be bought at 16*s.* per 1,000, delivered alongside.

Weighing coal, 20 c. per ton; unloading and putting ashore, 50 c.

Coal.—There is generally about 1,000 tons of steam coal available, which is delivered alongside from barges.

The Cost of Discharging some of the main imports is as follows: Coal: 1 fr. per ton, including the finding of the discharging stock, weighing etc. Nitrate of soda: 8*d.* per ton, including gear, weighing, sampling, etc. Timber: Agreements are generally made with the consignees of the cargo, who undertake the discharging for 4 fr. 50 c. to 4 fr. 75 c. per standard, including cost of discharging, harbour and dock dues all told; if not, the stevedore charges steamers for discharging deals and battens, 1 fr. 80 c. per standard; boards, 2 fr.; case-boards, 2 fr. 50 c. Grain, 1 fr. 20 c. per 1,000 kilos., all told.

Dispatch.—36 hours allowed for discharging 600 to 750 tons of coal; 40 hours for 800 tons; 48 hours for 850 to 1,000 tons. Soda nitrate, cargo of 1,200 tons, 120 tons per day, increasing to 1,900 tons and upwards, 150 tons; but a quicker dispatch is generally given. Timber, 75 to 100 standards per working day, according to the nature of the cargo; when the cargo is battens, 100 standards are often discharged. Grain, 200 tons per working day.

Pro Forma Charges on a vessel (steamer or sailing ship) of 541 register tons, carrying 1,000 tons cargo:—

	Fr.	c.
Boat assistance in and out, if employed	15	00
Pilotage inward	119	50
" outward	47	50
Dock dues	197	70
Passage of the dock gates	36	14
Water bailiff	17	50
Custom House	20	00
Consulate duty	3	10
Clearance	100	00

556 44 = £22 1*s.* 3*d.*

Pro Forma Charges on a sailing ship of 1,395 register tons, arriving with 2,100 tons of nitrate, drawing 20 ft. inward and 13 ft. out-

Belgium Ostend (continued).

ward (in tow) ; and steamer, 841 register tons, carrying 500 stds. of wood, or 1,500 tons of coal, drawing 17 ft. inward and 10 ft. outward :—

	Sailer. Fr. c.		Steamer. Fr. c.	
Pilotage from sea to Ostend (winter tax, October to March, 10 to 15 fr. more)	170	50	110	50
Pilotage from outer harbour into dock	4	23	—	—
Pilotage from Ostend to sea (winter tax, October to March, 10 to 15 fr. more)	60	50	31	50
Sluice dues	93	19	56	18
Dock dues	431	30	260	12
Water bailiff dues	19	50	19	50
Towage from outer harbour into dock.	60	75	—	—
Boatmen assistance	50	00	37	50
Sea-protest, etc. (for sailor) survey on hatches	80	00	36	70
Sanitary dues (vessel coming from Chile)	15	00	—	—
Brokerage.	125	00	100	00
	1109	97 =	652	00 =
	£44	0s. 3d.	£25	17s. 1d.

SELZAETE.

Selzaete, in lat. 51°12' N., long. 3°48' E., is situated on the Ghent Canal, half way between Terneuzen and Ghent. Vessels passing through Terneuzen sluice can go there safely.

Accommodation.—This is a safe and good port. The depth of water is the same as at Ghent. Vessels drawing over 12 ft. have a difficulty in discharging here, as there are no quays.

Tug-boats are generally obtainable, and horses are frequently used. The average cost of each horse up to Selzaete is 9 fr.

Dues and charges are the same as at Ghent, except that there are no dock dues.

TERMONDE.

Termonde is in lat. 51°2' N., long. 4°7' E.

Accommodation.—There is a water depth of 12 ft. from Antwerp up to Termonde. Masters of vessels bound here are obliged to make their Custom House entry and to take a pilot at Antwerp.

Pro Forma Charges on a vessel of 56 register tons, discharging cargo at Antwerp, and proceeding to Termonde to load 100 tons of oil-cake :—

	Fr.	c.
Quay dues	9	75
Visa	2	00
Brokerage	25	00
Bridge dues	6	32
Pilotage, up and down	47	66
	90	73 = £3 12s.

ZEE-BRUGGE AND BRUGES.

Zee-Brugge is in lat. 51°20' N., long. 3°10' E., and Bruges is in lat. 51°13' N., long. 3°13' E.

Population.—Bruges, 53,486.

Imports.—Dye-wood, wine, grain, coal, salt, wood, metals, etc.

Belgium—Zee-Brugge and Bruges (continued).

Exports.—Lace, cattle, chicory, oak bark, marble, fruits, cement, phosphates, etc.

Accommodation.

Zee-Brugge.—A new port of call on the Belgian coast situated near the mouth of the Scheldt, characterized by a mammoth breakwater covering the outer roadstead, with its 5,154 ft. of quayage built at depths ranging from 26 to 36 ft. at L.W.O.S.T. directly accessible from sea, and protecting the channel leading to the lock and the Bruges Ship Canal.

The quays on the inner side of the breakwater have extensive shed and rail accommodation, and are equipped with fourteen electric travelling cranes of $1\frac{1}{2}$ and $2\frac{1}{2}$ tons lifting capacity. A complete passenger railway station is existent on the breakwater, where express trains to and from Brussels and points beyond connect with the steamers.

The outer roadstead also provides a safe shelter for shipping in tempestuous weather.

The sea-lock at Zee-Brugge possesses the following characteristics :—

Length between roller gates	840 ft.
Width of entrances	65 ft. 8 in.
Depth of water over seaward sill at low tide	18 ft.

Besides this outer port, Zee-Brugge also comprises an inner harbour, above the lock; this is formed by an enlargement of the canal and by two basins, which are, however, not yet equipped for general traffic, but available for vessels discharging into lighters. The eastern basin is provided with two wharves, each 65 ft. long, and intended for vessels in quarantine.

Immediately beyond this inner harbour and in the ship canal are situated the private wharves of two large industrial concerns engaged in the manufacture of coke and by-products on the one hand, and of patent fuel on the other.

An oil refinery and saw mills will shortly be in operation in close proximity thereto.

Bruges.—The system of new docks is connected with the sea by a modern waterway 72 ft. wide at bottom level, 230 ft. at surface level, and $26\frac{1}{2}$ ft. deep. The docks are three in number, with an aggregate quayage of 4,455 ft., adequate shed accommodation, sixteen electric and six steam $1\frac{1}{2}$ and $2\frac{1}{2}$ ton travelling cranes, and one fixed 25 ton electric crane. There are also special depôts for storage of coal, and large tracts of ground for unloading and sorting timber. All the quays, sheds, etc., are fully equipped with railway lines, enabling goods to be discharged direct into trucks, or vice versa without any extra handling.

The new docks are connected with the Ostend Canal by a lock 319 ft. long, 39 ft. wide, with a depth of $15\frac{1}{2}$ ft., through which vessels can now proceed to and from the old dock, which formerly was reached from Ostend.

The ship canal is drawn in a perfectly straight line and is only crossed by one bridge, leaving a clear channel 72 ft. wide for the passage of shipping.

Pilotage.—Sea Pilotage same as at Ostend. Canal Pilotage optional. If Company's pilot taken, 20 fr. each way.

Port Charges.—Tonnage or Entrance Dues :—0.25 fr. per Moorsom register ton on all vessels, whether at Zee-Brugge or Bruges.

Belgium—Zee-Brugge and Bruges (*continued*).

Port or Dock Dues.—At Bruges, 0·30 fr., at Zee-Brugge, 0·40 fr. per ton of 1,000 kilos. loaded or discharged, the dues being applied to the inward or the outward cargo, whichever yields the larger amount to the dock authorities.

¶ Vessels proceeding out of Bruges docks to enter the Ostend Canal are liable to a charge of 0·20 fr. per Moorsom registered ton each way, in excess of the above-named entrance dues.

Steamers belonging to regular lines obtain a reduction of 20 per cent. on the tonnage dues, and on the dock dues after the 20th voyage accomplished within 12 months, counting from January 1 of each year.

Poll Tax on Passengers.—Landing from or embarking to a country outside of Europe :—

1st class	.	.	.	.	.	.	.	.	.	.	.	5 fr.
2nd class	.	.	.	.	.	.	.	.	.	.	.	3 fr.
3rd class	.	.	.	.	.	.	.	.	.	.	.	2 fr.

All passengers landing from or embarking to a European port, 1 fr. ; emigrants 0·50 fr. to any port.

BULGARIA.

The Kingdom of Bulgaria, including Eastern Roumelia, has an area of 38,080 square miles and a population of 4,035,623. Bulgaria, through its National Assembly, declared its entire independence from the Ottoman Empire in October 1908, the Prince assuming the title of Czar of the Bulgars.

Commerce.—The trade of the kingdom is of an annual value of about nine million pounds sterling, the imports being valued at four and a quarter millions, and the exports at a little over four and a half millions. A commercial convention signed at Sofia on December 9, 1905, fixed the maximum rates of duties to be levied on British imports into Bulgaria, together with the dues leviable on merchandise, etc., landed at Bulgarian ports. This convention also provided for the "most favoured nation" treatment between Great Britain and Bulgaria.

Internal Communications.—The railway system has a total length of a little over 1,000 miles, the majority being owned by the State. The railways are of the ordinary Continental gauge, and include part of the great trunk line from Constantinople to Paris, which passes through Philippopolis and Sofia. The only other line is that connecting the port of Rustchuk, on the Danube, with that of Varna on the Black Sea. Five new lines of railway, viz., the Sistov-Levski, Devna-Dobritsch, Radomir-Kustendil, Tirnovo-Stara Zagora and Mezdra-Vidin are in course of construction and will be completed by the end of 1911. The Danube provides the only other artery for trade, the roads being of a primitive character. A post, telegraph, and telephone system has been established by the State.

Currency, Weights and Measures.—Gold was adopted as the single standard of value in 1897, and silver, nickel and bronze coins were constituted a subsidiary currency with limited legal tender. The denominations and coins in circulation are : 100 stotinki (centimes) = 1 lev = $9\frac{1}{2}d.$; 25.26 lev = £1 sterling. The Bulgarian gold coins are the 100, 40, 20, and 10 leva pieces, but there are very few of these, the gold circulation being principally made up of 10 and 20 franc pieces ; the silver coins are 5, 2, 1, and $\frac{1}{2}$ leva pieces ; nickel 20, 10, 5, and $2\frac{1}{2}$ stotinki pieces, and bronze 10, 5, and 2 stotinki pieces. The National Bank of Bulgaria issues notes which circulate at par.

Port Charges.—There are no harbour or tonnage dues in Bulgarian ports, the only charge being a fee of 2 lev for endorsement. **Light Dues:**— $11\frac{1}{2}$ stotinki per ton on the first 800 tons ; and $5\frac{3}{4}$ stotinki per ton on all over 800 tons, with a discount of 10 per cent. on the total amount for each port touched at.

Sanitary Dues.— $11\frac{1}{2}$ stotinki per ton, payable at the first port touched at in the Black Sea and then at no other.

Emigration.—There are no regulations governing shipowners who take emigrants from Bulgarian ports, nor do any regulations exist prohibiting the immigration of undesirable persons into the country.

Bulgaria.

BALJIK.

Baljik, or Baltchick, in lat. 43°26' N., long. 28°12' E., is on the W. coast of the Black Sea, about 20 miles N.E. of Varna.

Exports.—Wheat, barley, and maize.

Accommodation.—The anchorage is in 5 to 6 fathoms, on a mud bottom, and is perfectly secure even in winter.

Port Charges.—Same as at Varna.

BOURGAS.

Bourgaz, or Burgas, in lat. 42°30' N., long. 27°30' E., is situated at the head of the gulf of the same name, about 120 miles N.W. of the Bosphorus.

Population.—About 12,949.

Imports.—Iron, hardware, cotton yarns, and cotton manufactures.

Export.—Chiefly grain.

Accommodation.—There is a quay 600 metres (1,966 ft.) long, where vessels load and discharge, with 25 ft. of water alongside. It is proposed to construct two others like it, each to be 700 metres (2,294 ft.) long. Vessels can load 1,000 to 1,200 tons of cereals per day.

Pilotage.—Inwards, 20 fr.

Port Charges.—INTERNATIONAL DUES.—**Light Dues**:—20 paras (gold) per reg. ton on the first 800 reg. tons, and 10 paras per reg. ton on all over 800 reg. tons, with a discount of 10 per cent. on the total amount for each port touched at. **Sanitary Dues**:—20 paras (gold) per reg. ton, payable at the first port in the Black Sea, and not paid at any other port. **LOCAL DUES**: **Port Dues**:—Vessels up to 200 tons, 20 c. per ton; 201 to 500, 15 c. per ton; 501 to 1,000, 10 c. per ton; over 1,000, 5 c. per ton. **Wharfage Dues**:—Paid by receivers and not by ship. **Sanitary Dues**:—50 c. for bill of health. **Anchorage Dues**:—Up to 200 reg. tons, 20 c. per reg. ton; 300 reg. tons, 15 c.; 500 reg. tons, 10 c.; 1,000 reg. tons and over, 5 c. per reg. ton. **Permit to Enter**:—Steamers pay 2 fr.; to exit 2 fr. **Manifest in duplicate**:—Vessels of less than 1,000 reg. tons, 6½ fr.; over 1,000 reg. tons, 10½ fr. Translation of manifest does not exceed 10 fr. **Consular Fees**:—Vising articles, 2s. 6d. **British Bill of Health**:—10s. **Labourage**:—4 fr. per man per day in winter, 5 fr. in summer. **Provisions**:—Fresh meat from 9d. to 1s. per kilo. Vegetables, dear and not good. Fish, cheap and good. Pipes have been laid down by means of which excellent spring water can be obtained at the rate of 1.50 fr. per ton.

Pro Forma Charges on a vessel of 1,934 reg. tons, having discharged cargo:—

	£	s.	d.
Port dues, 205.70 fr. at 25	8	4	7
Sanitary guardians, if the steamer comes from Alexandria or infected port	0	5	0
Manifests and stamps	0	10	0
Discharging cargo, 200 tons at 10d.	8	6	8
Winchmen on board, 3 at 6s.	0	18	0
Tallymen on board, 3 at 6s.	0	18	0
Boat hire for mooring and unmooring	0	10	0
Telegrams and postage	0	5	0
Agency fee	5	5	0

£25 2 3

Bulgaria.**RUSTCHUK.**

Rustchuk, in lat. 43°49' N., long. 25°58' E., is a Danube port.

Population.—33,632.

Imports.—Yarns, cotton, woollen goods, iron, sugar etc.

Exports.—Wheat, maize, etc.

Accommodation.—Depth of water about 23 ft. It is only when the water is very high that vessels of 600 to 700 tons can reach Rustchuk. A wharf is being built, which will be finished in two or three years.

Port Charges.—**Stamp Duty:**—5 to 10 fr. for each ship's manifest. **Mooring,** from 17 to 27 fr. per vessel. **Labour:**—1 fr. per ton.

VARNA.

Varna Bay, in lat. 43°13' N., long. 27°57' E., is on the W. coast of the Black Sea, about half way between Bourgas and Constantza.

Population.—37,417 (Town).

Imports.—Manufactured goods, colonial produce, iron, chemicals, oil, coal, etc.

Exports.—Grain, tallow, hides, cheese, poultry, eggs, and tobacco.

Accommodation.—It is one of the safest anchorages in the Black Sea, and ships load and discharge alongside the quays in a depth of 4½ fathoms. Two new quayside sheds have been recently completed.

Port Charges.—**Pratique Dues:**—½ piastre (1d.) per ton net reg. **Light Dues:**—½ piastre (1d.) per ton net reg. **Anchorage and Buoy Dues:**—22 fr. **Port Dues:**—20 centimes per ton for the first 200 tons; 15 c. for each additional ton up to 500 tons; 10 c. for each additional ton up to 1,000 tons, and 5 c. for every ton upwards for every eight days, or fraction of eight days, the vessel remains in port. **Loading and Trimming** grain costs about 9d. per unit. Discharging general cargo and coal, 9d. per ton; rails, 10d. per ton. Lighters are no longer used for loading or discharging. **Ballast:**—From 1s. to 1s. 6d. per ton, according to agreement. Ballast can, under certain restrictions, be thrown overboard at the place marked by a buoy. **Provisions:**—Plentiful and moderate in price. Biscuit bread, 20s. per cwt. Beef and mutton, 4d. per lb. Water, free. **Customs Manifest:**—£1. **Hire of Stages:**—£2 per stage.

Pro Forma Charges on a steamer of 1,934 tons net reg., drawing 23½ ft. loaded:—

	£	s.	d.
Harbour dues	.	8	6 2
Brokerage	.	5	5 0
Pilotage in and out	.	4	0 0
Boat hire, mooring and unmooring	.	2	10 0
Hire of stage	.	2	0 0
Harbour master	.	1	0 0
Bills of health	.	0	15 0
Customs manifest	.	1	0 0

£24 16 2

CRETE.

Crete is the second largest island in the Eastern Mediterranean, having an area of 3,365 square miles and a population of 330,000.

Commerce.—The total trade of the island amounts to about £1,500,000 per annum, the imports (mostly textiles and food stuffs) being in 1906 valued at £770,802, and the exports (olive oil, carobs, hides, honey and wax, vallonea, wine and fruits, etc.) £695,640. All goods introduced into the island, with the exception of tobacco, tombac and alcohol, the taxation of which is governed by special laws, pay an import tax of 8 per cent. *ad valorem*, from which 10 per cent. is deducted. In addition to this, a surtax of 3 per cent. is levied. Export dues on produce exported from the island are levied as follows : Oil, soap, olives, and spirits, 13 per cent. *ad valorem* ; vallonea, silk, honey and wax, 11 per cent. *ad valorem* ; raisins, cocoons, wine lees, vinegar, carobs, and olive residue, 10 per cent. *ad valorem* ; oranges, mandarines, citrons, wine, olive residue oil and soap manufactured therefrom, 5 per cent. *ad valorem*. In addition to these duties all produce of the country is taxed an additional 1 per cent. *ad valorem* on exportation ; a deduction of 10 per cent. of this 1 per cent. is, however, made. These dues are calculated on the basis of a tariff which is published monthly by authority of the Councillor for Finance, except in the case of oil, wine and soap, for which a quarterly tariff is published.

Internal Communications.—These are poor, there being at present few roads in the island fit for wheeled traffic, and no railways. Crete was admitted to the Universal Postal Union in 1902, and there are now (1908) numerous Cretan post offices on the island, besides the Austro-Hungarian and French post offices in the three chief towns, and an Italian office at Canea. There are 230 miles of telegraph line, to which the Eastern Telegraph Company's system has been linked up at Hierapetra and San Nicolò.

Currency, Weights and Measures.—The Cretan money is similar to that of Greece, but the circulation of European gold coins is permitted. The current coins are : Silver—5 drachmae = 4s., 2 drachmae = 1s. 8d., 1 drachma = 10d., and $\frac{1}{2}$ drachma = 5d. Nickel—20 leptas = 2d., 10 leptas = 1d., 5 leptas = $\frac{1}{2}$ d. Copper—2 leptas = $\frac{1}{5}$ d., 1 lepta = $\frac{1}{10}$ d. Commercially the metric system both of weights and measures is well understood and is in general use, but the oke, a Turkish measure (= 2.75 lb. or 1.25 kilos.) is also used. The native linear measure most generally used is the "peek," which is equal to nearly $\frac{3}{4}$ yard.

Quarantine Regulations.—The chief health office is at Canea, this being the only office empowered to issue new bills of health. There are, however, subordinate offices established at Suda, Rethymo, Candia and Aghios Nicolaos, from all of which a visa may be obtained. Immediately on arrival at a port the captain of a ship must report himself to the health officer, and no communication with the shore must take place until pratique has been granted. If the vessel should have last cleared from an infected port, or if from any other cause pratique is withheld, the vessel must at the

Crete.

option of the captain proceed to either Smyrna, Beyrout, or Delos, and there perform quarantine, there being no lazaretto at Crete.

CANDIA or MEGALO KASTRO.

Candia is in lat. $35^{\circ}16'$ N., long. $25^{\circ}9'$ E.

Population.—22,500.

Accommodation.—Vessels of 300 tons can enter the port, the entrance to which is very narrow, but it is perfectly safe inside, where there is 10 to $10\frac{1}{2}$ ft. of water. It is unsafe to load in the open roadstead, except in the height of summer. In the event of a sudden storm from the N. ships endeavour to run for shelter under the island of Standia opposite.

CANEA.

Canea is in lat. $35^{\circ}29'$ N., long. $24^{\circ}1'$ E.

Population.—About 25,000.

Imports.—Flour, wheat, barley, oats, colonial produce, and general merchandise.

Exports.—Olive oil, wines, carob beans, almonds, fresh fruits, etc.

Accommodation.—The harbour is unsafe; in northerly and north-easterly winds it is very dangerous. Width of the entrance, 390 ft.; depth at the entrance, 32 ft.; depth at the anchorage, 12 to 15 ft. Sailing vessels up to 300 tons can be loaded and discharged by lighters carrying 8 to 10 tons. Steamers of large tonnage anchor in the roadstead two or three hundred yards from the shore, when the weather permits. There are no cranes.

Pilotage.—Not compulsory. Steamers, 10 fr.; sailing vessels, 10 to 20 fr. **Towage:** 4 fr. per hour.

Port Charges—Mooring:—10 centimes per reg. ton inside the harbour, and 5 c. outside the harbour. (Payable only by vessels bearing Turkish or Cretan flags. All other vessels are free of this charge.) **Entrance Fees:**—14 to 15 fr. **Boat Hire:**—3 to 4 fr. per day. **Light Dues:**—Up to 800 tons, 10 c. per reg. ton; over 800 tons, 5 c. per reg. ton. **Sanitary Dues:**—Up to 500 tons, 12 c. per reg. ton; over 500 tons, 7 c. per reg. ton. **Brokerage:**—According to agreement.

Pro Forma Charges on a steamer of 800 tons reg., with 150 tons general cargo in, and ballast out, drawing 16 ft. loaded:—

	Fr.
Mooring, at 5 centimes per reg. ton	40
Pilotage, outwards	5
Towage, 10 hours	40
Boat hire	24
Light dues	80
Sanitary dues	80
Stamp for Custom House manifest	3

272 = £10 15s. 10½d.

HIERAPETRA.

Hierapetra is in lat. $35^{\circ}0'$ N., long. $25^{\circ}43'$ E.

Population.—3,000.

Crete—Hierapetra (*continued*).

Accommodation.—The harbour is choked up and useless. The anchorage on the E. side of the bay is safe with winds from N. and N.W., but open and unsafe with all S. winds. Matala Cove is sheltered from the N., but open to W. winds.

KISAMO BAY.

Kisamo Bay is in lat. $35^{\circ}35'$ N., long. $23^{\circ}40'$ E.

Accommodation.—Although it is open to the N., there is good anchorage in 17 fathoms, muddy bottom, in the S.E. angle of the bay. The harbour is almost dry, and choked with sand.

MEGALO KASTRO.

(See **Candia or Megalo Kastro**, p. 42.)

RETHYMO.

Rethymo is in lat. $35^{\circ}20'$ N., long. $24^{\circ}28'$ E.

Population.—9,704.

Accommodation.—There is now only a depth of 3 ft. of water in the harbour, owing to the sand silting up and the absence of a dredging machine. Consequently even sailing vessels are obliged to remain in the bay and load and unload from lighters, often at considerable risk. The lighters also can only be lightly laden or they are unable to enter the port. The roadstead is very dangerous in the winter on account of the northerly gales.

SAN NICOLO.

San Nicolo offers good anchorage, in from 35 to 40 ft., between the island of San Nicolo and the coast, but is open to N.E. gales.

SITIA.

Sitia is in lat. $35^{\circ}10'$ N., long. $26^{\circ}11'$ E.

Population.—5,000.

Accommodation.—There is excellent anchorage in 7 or 8 fathoms, $1\frac{1}{2}$ cables from the shore, but it is open to E. and N.E. winds. Fresh water can be obtained.

SUDA.

Suda is in lat. $35^{\circ}30'$ N., long. $24^{\circ}10'$ E.

Accommodation.—Suda Bay forms an excellent anchorage for vessels of any size, being almost landlocked, but it is seldom resorted to by merchant ships, except under stress of weather, or when laden with coal on Government account, which is very rarely.

CYPRUS.

Cyprus, the third largest island of the Mediterranean, has an area of 3,584 square miles and a population of 237,025. It is administered by Great Britain under a convention signed on June 4, 1878, by which H.M. the Sultan assigned the island to England to be occupied and administered by her. The trade of the island amounts to about one million sterling per annum, equally divided between the imports and exports. Under the provisions of the Port Charges Law of 1901 repealing the Act of the same name of 1900, all charges imposed on account of port, health, and light dues were ordered to be levied and paid upon goods, animals, or things imported into or exported from any port or place in the island of Cyprus, in accordance with the schedules attached to the Act. These charges are to be recovered from the master or agent of the ship which may be detained until payment has been made, or security for such payment given to the satisfaction of the port officer. Shipmasters must deliver to the port officer specifications of all goods to be landed, and also of any goods to be loaded. Sailing vessels may compound by payment in advance of 1s. per ton net register every half-year, payable on the 1st of January and the 1st of July respectively. These compositions having been arranged, the delivery of specifications will not be required. The currency is English gold and Cyprus silver and copper coins. The coins current are : Gold—the English sovereign.

Silver—

18 piastres	s. d.	
9 "	= 2 0	} Limit of tender £3.
4 " (20 paras)	= 1 0	
4 "	= 0 6	
4 "	= 0 4	

Bronze—

1 piastre	= 1½d.	} Limit of tender 3s.
½ "	= ¾d.	
¼ "	= ¾d.	

The weights and measures in general use are as follows :—

WEIGHTS.

400 drams = 1 oke = 2·8 lb. English.	180 okes of carobs = 1 Aleppo cantar.
2½ okes of cotton = 1 litre.	44 okes = 1 cantar for goods generally.
	800 okes = 1 ton.

MEASURES.

Dry Measure.—Kile or kilo, about 56 lb. English, used for measuring corn = 1 bushel.

Liquid Measure.—Quantities of liquor are ascertained by weight as follows :—

400 drams = 1 oke.	128 okes = 1 load ; used for wines, spirits, etc.
2½ okes of olive oil = 1 litre.	250 okes of olive oil = 1 cantar.

The English gallon, quart, and pint are also used.

Branches of the Imperial Ottoman Bank, which have been established in all the business centres, afford banking facilities. There is a post and telegraph service and cable communication via Alexandria and Latakia. A railway 61 miles long across the northern portion of the island connects Famagusta with Morphu, via Nicosia, the capital.

Cyprus.

FAMAGUSTA.

Famagusta, in lat. $35^{\circ}5'$ N., long. $33^{\circ}58'$ E., is situated on the E. coast, about 40 miles to the N.E. of Larnaca.

Population.—3,830.

Exports.—Barley and wheat.

Accommodation.—There is a large outer harbour here (formed by a reef of rocks) with $4\frac{1}{2}$ to 7 fathoms of water. The approach channel (250 ft. wide) and entrance to the inner harbour has a depth of 26 ft. The inner harbour is 900 ft. long, 600 ft. wide, and 24 ft. deep. The quay wall is 900 ft. long, and has a depth of water alongside of 24 ft. The basin at the southern end of the inner harbour is 450 ft. long, 200 ft. wide, and 15 ft. deep, with an iron jetty 390 ft. long, with 15 ft. of water alongside. The Customs offices and stores are built on the quay, and there is a large crane with a lifting capacity up to 10 tons on the quay, and a smaller one capable of lifting 3 tons at the end of the jetty.

The Cyprus Government Railway runs from the new quay to Nicosia, the capital of the island.

Famagusta is included in the municipality of Varoshia, where provisions can be obtained.

Port Regulations.—No vessel is allowed to come alongside or discharge cargo without the permission of the Superintendent of the Port.

No vessel is allowed to lie alongside the quay or pier after 5 p.m., without the permission of the Superintendent of the Port.

Ballast is not to be discharged from vessels lying in the Inner or Outer Harbour, nor are ashes, dirt, stones, or rubbish to be thrown into the harbour. The penalty for shipping, carrying, or discharging ballast in any place not appointed by the Superintendent of the Port, or for not providing tarpaulins or other safeguard to the ship's side to protect the ballast from falling into the sea, is a fine not exceeding £10.

No vessel having powder, dynamite, or other explosives on board is allowed to enter the Inner Harbour, but is to discharge same in the Outer Harbour, either in boats or lighters before entering the Inner Harbour, or to land the same at a place in the Outer Harbour appointed by the principal Officer of Customs and Superintendent of the Port. The penalty for not hoisting the red flag at the main when any part of the cargo consists of gunpowder or other explosive material is a fine not exceeding £100.

Permission to occupy a berth, use any crane, trolleys, and other machinery belonging to the port must be obtained from the Superintendent of the Port.

Vessels are not to be careened or heeled over except at such place as may be indicated by the Superintendent of the Port.

Vessels are not allowed to anchor in the approach channel, nor at the entrance to the Inner Harbour.

All vessels lying at anchor in the Outer and Inner Harbour must exhibit an anchor light between the hours of sunset and sunrise.

No vessel shall change her berth without the knowledge and consent of the Superintendent of the Port.

Pilotage.—For vessels up to 1,500 tons reg., £1; vessels over 1,500 tons reg., £1 10s.

Cyprus—Famagusta (*continued*).

Port Charges.—All vessels using any part of the Inner Harbour are charged the following rates. **Anchorage and Mooring:**— $\frac{1}{4}\%$ cp. = $\frac{1}{3}d.$ per reg. ton per day (maximum for vessels under 75 tons, 1s. per day).

Berthage alongside Quay or Jetty:— $\frac{1}{4}\%$ cp. = $\frac{1}{3}d.$ per reg. ton per day. (This is in addition to the rate chargeable in respect of anchorage and mooring).

Cranage:—For each single lift not exceeding 1 ton, 1 cp. = $1\frac{1}{3}d.$; exceeding 1 ton, 3 cp. = $4d.$; double lift, i.e., any lift requiring special adjustment of gear, 1s. One-half the rates chargeable in respect of anchorage and mooring shall be paid (1) by all vessels anchoring in the Outer Harbour; (2) by sailing vessels remaining in the Inner Harbour longer than seven days; (3) by sailing vessels arriving and sailing in ballast or calling for orders.

The following vessels are exempt from the above rates: (a) All vessels laying up for the winter in the Inner Harbour, provided that they moor at such places as the Superintendent of the Port shall direct. (b) All lighters and boats licensed under the Boats Regulation Law, 1884, discharging cargo from vessels in the harbour, or taking cargo on board such vessels. (c) All vessels seeking refuge during a storm, provided that no commercial transaction takes place, and they depart as soon as weather permits.

Water.—Vessels not exceeding 50 tons burden, 3 cp. = $4d.$; over 50 tons and not exceeding 100 tons, 5 cp. = $6\frac{2}{3}d.$; over 100 tons and not exceeding 200 tons, 1s.; over 200 tons, 1s. 6d. per ton (224 galls.) of water supplied.

KYRENIA.

Kyrenia, in lat. $35^{\circ}19' N.$, long. $33^{\circ}21' E.$, is on the N. coast of the island.

Population.—1,336.

Imports.—Timber and goats.

Export.—Locust beans.

Accommodation.—Kyrenia is the usual port for vessels trading between Cyprus and the opposite coast of Caramania. A small harbour is in course of construction; the greatest depth of water will be about 20 ft. The roadstead is extensive, but the holding ground is not very good, and northerly winds raise a very heavy sea.

LARNACA.

Larnaca (Citium), in lat. $34^{\circ}57' N.$, long. $33^{\circ}38' E.$, situated on the S.E. coast, is the principal port in the island.

Population.—7,964.

Imports.—Cotton and wool manufactures, hardware goods, sugar, soap, petroleum, leather, earthenware, etc.

Exports.—Barley, wheat, locust beans, terra umbra, cotton, wool, gypsum, wine, raisins, silk cocoons, etc.

Accommodation.—Larnaca is an open roadstead, with good anchorage in 8 to 12 fathoms in summer, and 10 to 16 fathoms in winter. The bottom shoals regularly from 20 fathoms to the shore. The best holding ground is on the N. side of the bay, in 10 to 16 fathoms, with lighthouse bearing W. or W. by N. During the winter months, when the wind is from N. to E., there is usually a surf on, which renders landing sometimes difficult, but not dangerous. Ships ride easily at anchor, owing to the current,

Cyprus—Larnaca (continued).

which generally sets to N. Winds from S.E. to S. are usually of short duration, and seldom cause inconvenience to ships at anchor. Goods are discharged into lighters in the roadstead, and landed at an iron pier 450 ft. long (an extension of 450 ft. with a concrete arm 250 ft. long is now under construction) opposite the Custom House, on which is a crane lifting up to 5 tons, and a travelling crane to lift $1\frac{1}{2}$ tons. The depth of water at the end of the pier is 7 to 8 feet. Water can be obtained (gratis) from pipes laid on to the end of the pier. Cargo for exportation is taken off in lighters, and transhipped to vessels in the roadstead. There is also a small iron jetty supplied with a $1\frac{1}{2}$ ton crane.

All kinds of provisions can be obtained, good and cheap.

Larnaca being the only port in Cyprus where quarantine can be performed, masters of vessels from an infected port, or having foul bills of health, are advised to proceed there direct.

Pilotage.—There are no licensed pilots, none in fact being required, but a signal would bring off experienced boatmen.

Port Charges.—Pier Rates, Berthage:—Vessels under 75 tons burden, 2s.; over 75 tons, $\frac{1}{4}$ piastre ($\frac{1}{3}$ d.) per ton, with an additional half rate after six days. Vessels discharging or loading coastwise cargo pay half rates. Lighters discharging or loading cargo at piers are exempt from payment of berthage dues.

Cranage.—For each single lift not exceeding 1 ton, 1 piastre; for each single lift exceeding 1 ton, 3 piastres; for each double lift, 1s.

Ballast.—Shingle ballast can be obtained from the beach on payment of 6d. per ton.

QUARANTINE CHARGES.

	s.	d.
For ships of 1 to 50 tons	1	2 per diem.
„ 51 to 100 „	2	4 „
„ 101 to 200 „	3	6 „
„ 201 and upwards.	4	8 „
Quarantine guards, each	3	6 „
Guard boat	5	0 „
Boat for provisions	2	6 „
Men-of-war and ships driven in through stress of weather are exempt.		
Medical inspection: Steamer, £1; sailing vessels over 50 tons, 10s., under 50 tons, 5s.		

Pro Forma Charges, on a steamer:—

	£.	s.	d.
Port dues	4	5	0
Overtime (Custom House)	1	6	0
Postages	0	2	6
Attendance	1	1	0
	£6	14	6

LIMASOL.

Limasol, in lat. $34^{\circ}42'$ N., long. $35^{\circ}3'$ E., is situated on the S. coast, in Akrotiri Bay.

Population.—8,298.

Imports.—Cotton and woollen manufactures, iron, earthenware, etc.

Exports.—Wine and spirits (raki), raisins, locust beans, and gypsum.

Accommodation.—Limasol is open from E. by N. to S. by W. A heavy surf breaks on the coast during easterly and southerly gales, but

Cyprus—Limasol (*continued*).

the anchorage is considered safe at all times of the year. The water being deeper than at Larnaca, vessels anchor nearer to the shore. The best holding ground is E. of the pier, in about 10 to 16 fathoms. There is an iron pier, 600 ft. long, with a "T" head, having a depth of 18 ft. at its extremity, alongside of which small steamers can lie. There is a crane to lift 3 tons.

Water is laid on to the end of the pier, where it can be obtained by ships' boats free.

Pilotage.—Not compulsory. Rates according to agreement.

Port Charges.—**Stevedore** :—Loading, 8*d.* per ton ; discharging, by agreement. **Ballast** :—1*s.* 6*d.* per ton, delivered alongside. Beef, 5*d.* per lb. ; mutton, 5*d.* per lb. ; bread, 1*d.* per lb.

PAPHO.

Papho, in lat. 34°48' N., long. 32°25' E., is on the S.W. end of the island.

Population.—3,134.

Imports.—Timber, tiles, and petroleum.

Exports.—Grain, carobs, wine, oranges, and silk.

Accommodation.—There is a small harbour here, available only for boats. Vessels load off the coast. The anchorage is considered dangerous ; rocky bottom. The coast is exposed in winter to gales from S. to W.N.W. Good anchorage and shelter can be had behind the Mullin Rocks. There is a fixed white light here, visible for 17 miles.

Extensive copper mines are being worked at Limni, near Polis, in Chrysokhon Bay, on the N.W. part of the coast.

DENMARK.

The Kingdom of Denmark has an area of 15,592 square miles, and a population, according to the 1906 census, of 2,605,268.

Commerce and Shipping.—The trade of Denmark in 1907 amounted to £80,432,665, made up of imports valued at £43,825,888, and exports £33,606,777. On January 1, 1909, a new Customs tariff was put in force. Under this new law petroleum has been placed upon the free list, whilst the duty on coal and coke will be finally removed in 1913. The duty of 2 to 3 per cent. *ad valorem* upon steamers and sailing vessels of all kinds has been dropped entirely. Wood and timber duties have been reduced. The slight existing duty on roughly manufactured iron and steel goods—rails, bar, angle, bolt, rod, rolled wire, sheet, plate, various tubes, etc.—has been abolished. Tin—plates, bar, bolt, rough tubes—has been placed on the free list. Copper and brass—rough rolled wire—free. On various manufactured metal goods the duty has been reduced; in other cases it has been increased.

The chief characteristics of the new tariff are: Lower duties upon raw materials and various necessities of life; somewhat reduced protection upon textile fabrics, agricultural and other machinery, paper, various metal wares, etc.; increased protection upon various kinds of ready-made clothing, cutlery, gloves, boots and shoes, etc.; higher duties on tobacco, cigars, cigarettes, wine, spirits, dried and fresh fruit, etc. Agricultural products remain free, as before.

By treaty obligations the "most favoured nation" clause is extended to British trade with Denmark, British vessels being subject to the same dues and charges as Danish vessels, and vice versa. Copenhagen is a free port, and the harbours at Aalborg, Aarhus, Esbjerg, Horsens, Kolding, Nyborg, Svendborg, and Veile have been deepened to 24 ft., so that many of the steamers carrying maize, oil-cake, and cattle food to Denmark from the Black Sea and the United States are directed to these provincial ports.

An important work on behalf of shipowners is being carried on by an association formed in 1905 with the object of protecting the interests of shipowners trading in the White Sea and Baltic, to which the name of "The Baltic and White Sea Conference" has been given. The total tonnage owned by the members of this Conference on July 1, 1908, amounted to 2,529,264 tons.

Mercantile Marine.—The mercantile marine registered under the Danish flag has a total tonnage of 545,980 tons, made up of 695 steamers of 404,946 tons and 3,626 sailing-ships of 141,034 tons.

Internal Communications.—The State railways have some 1,167 miles of track open for the public service; a further 916 miles are worked by private companies. With the exception of a short section of 109 miles these railways have a uniform gauge of 4 ft. 8½ in. The country is also well provided with good and well-kept roads.

Currency, Weights and Measures.—The krone of 100 öre

Denmark.

is the monetary unit; it is valued at 1s. 1½*d.*, or 18 kroner = £1. The French metrical system of weights and measures was adopted in March, 1907, but the authorities may still use the old system in conjunction with the metric system for two years from that date, and the use of the old system in trading circles is permitted until March, 1912.

OLD SYSTEM.

LENGTH.

12 tommer	= 1 fod	= 1·02972 ft.
2 fod	= 1 alen	= 2·05944 "
3 alen	= 1 favn	= 6·17833 "
2 favn	= 1 rode	= 12·35666 "
2,000 roder	= 1 Danish mil or mile	= 4·68055 miles.

CAPACITY—LIQUIDS.

3 pægle	= 1 flaske (liquids)	= 1·274355 imperial pints.
4 pægle	= 1 pot	= 1·699146 "
2 potter	= 1 kande	= 3·39828 "
4 kander	= 1 viertel (spirits)	= 1·699146 imperial gallons.
4½ viertel	= 1 anker (liquids)	= 8·070905 "
136 potter	= 1 tønne	= 28·88548 "
6 ankerne	= 1 oxehoved (wine and spirits)	= 48·42567 "
4 oxehoveder	= 1 fad	= 193·70268 "
2·08 Danish barrels	= 1 quarter.	

CAPACITY—DRY GOODS.

2 skepper	= 1 fjerdingkar	= 955769 imperial bushels.
4 fjerdingkar	= 1 tønne	= 3·823079 "
12 tønner	= 1 læst.	= 45·876948 "

The Commerce læst is the standard measure for ships—it is equal to 2·52 tons English.

WEIGHTS.

100 kvinten	= 1 pund	= 1·10233 lbs. avoirdupois.
100 pund	= 1 centner	= 110·233 "
40 centner	= 1 læst.	= 4409·32 "
52 centner	= 1 skiplæst	= 5732·116 "
2,030 Danish pounds	= 1 ton (English).	

The Danish system of ship measurement now corresponds with the English, the tonnage being computed in English register tons.

Health Declarations.—1. Provided ships have no dead, neither have had any dead or sick on board during the voyage (accidents, however, not included), masters are dispensed from making the report required by the law of February 8, 1805, on condition of their sending into the Custom House a written declaration in the form specified in the following paragraph, as soon as they take up their berth, and before they have any communication with the shore.

The same exceptions shall on the same conditions hold good with respect to such vessels arriving from home ports, even if they have sick persons on board, if they can produce a certificate from an authorized doctor that these latter are not suffering from infectious diseases.

2. The declaration required by Section 1 shall be made out in the following manner :—

I, the undersigned, master of the . . . , coming from . . . , hereby declare on my honour and conscience that I have not at present, neither have I had during the voyage, any deaths on board my ship, and that neither does any one on board my ship, so far as I know, suffer from any sickness which the law requires me to report, neither have I had any communication with any ship on board which such sickness prevailed.

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3. When the vessels in question come from places where the Asiatic cholera is officially notified as epidemic, or when they, without having been at such a place, have at the time, or have had during the voyage, cholera patients or corpses of such on board, or have had any communication with any ship, etc., the master shall comply with the Regulations of the Law of May 1, 1868.

4. In other cases not coming under the preceding Section 3, when the ship has at the time, or has had during the voyage, deaths on board, or has on board sick persons whose presence necessitates reporting in legal form, the vessel may be allowed, before reporting, to take its ordinary berth and land the healthy passengers, after which the master shall immediately make his declaration before any sick person or corpse is landed.

Cholera : Rules and Precautions.—All vessels arriving from an infected port or place shall neither land passengers nor crew, nor have any communication with the shore, until the quarantine doctor has been on board and granted them free pratique ; vessels coming from such infected ports or places shall, on arrival in the roads, immediately hoist the quarantine flag, or in place thereof a white flag on the main-top. Masters neglecting to comply with these regulations will render themselves liable to a fine of 200 rix-dollars (about £21 sterling). The master (no others) of a passing ship, if eight days from a smitten place, and having had no deaths or sickness on board, may possibly be allowed to land without examination of the vessel, on making declaration to a doctor at the quarantine station to that effect.

Lifeboat Stations.—The lifeboat stations are as follows, viz. :—

On the Western Coast of North Jutland.—Skagen, Kandestederne, Hirtshals, Lönstrup, Lökken, Blokhuse, Slette Strand, Thorup Strand, Lild Strand, Hanstholmene, Klitmøller, and Nordre-Vorupøre, furnished with lifeboat and rocket-apparatus ; Orum Strand and Vester-Agger, rocket-apparatus ; Agger Kanal, lifeboat ; Thyboron, rocket-apparatus ; Flyvholm, lifeboat and rocket-apparatus ; Ferring, rocket-apparatus, Tuskjær, lifeboat and rocket-apparatus ; Bjerrehuse, rocket-apparatus ; Vedersø Klit, lifeboat and rocket-apparatus ; Søndervig, rocket-apparatus ; Sønder Lyngvig, lifeboat and rocket-apparatus ; Haurvig and Bjerregaard, rocket-apparatus ; Nymdegab, lifeboat ; Hennesstrand, rocket-apparatus ; Blaavandshuk, lifeboat and rocket-apparatus ; Rindby (Fanö), lifeboat.

On the Eastern Coast of North Jutland.—Aalbæk, furnished with lifeboat and rocket-apparatus.

On the Isle of Bornholm.—Allinge, Gudhjem, and Svaneke, furnished with rocket-apparatus ; Snogebæk and Rønne, lifeboat and rocket-apparatus.

If communication with a stranded vessel can be effected in no other way, a 9 yard line will be thrown to the shipwrecked men by aid of a rocket-apparatus ; hauling on board this line, a 3½ in. hawser will follow, at the end of which a block is made fast, in which is the bight of a thin line. Both ends of this line are fast on the life-chair, that, with its thimble, wanders on the 3½ in. hawser. The hawser must be made fast on board the ship as high as possible, in order that the chair, if possible, may clear the surf. By the aid of the thin line that passes the block made fast on the hawser on board, the chair can be hauled to and fro from the beach, and thus communication for the saving of the shipwrecked is effected.

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Emigration.—No emigrant ship may convey passengers in more than two decks below the main deck, but there may be deck cabins, if solidly constructed and properly fitted. Deck cabins on a hurricane deck may not, however, be used for passengers' quarters. The ship must be in every respect seaworthy, and provided with all the necessary tackle and navigating apparatus for such a journey.

The captain and mates must be reliable and capable, and frequently have served as such on transatlantic voyages. The ship must have a crew corresponding with its size and the length of voyage. If a steamship, the same must be provided with a sufficient supply of coal in proportion to power of engines and length of voyage.

The distilling apparatus, if such is carried, shall be in perfect order and reliable. If on inspection the ship is found in every respect to comply with the requirements aforesaid, the inspectors will grant a certificate. This inspection must take place not less than once a year.

This permit shall determine the number of emigrants to be taken by the ship. The agent will be required to see that no emigrant embarks in any ship before the necessary permit has been obtained.

Emigrants for embarking in Danish ports must undergo a medical inspection, and the agent is responsible to see that this is done.

An authorization to act as substitute for an emigration agent can only be granted to persons of good reputation, of full age, and to those who have resided for the past five years preceding the grant in the country.

The contract must also state at what port outside Europe the landing is to take place, and by what ship the voyage from Europe is intended to be made, by what railway route the railway journey from the landing port to the place of destination shall be effected, and the place of birth of the emigrant.

Space.—On the upper or main deck there shall be at least 5 sq. ft. free surface for each adult steerage passenger and 10 sq. ft. for each adult cabin passenger. For steerage quarters the following shall apply :—

For the upper steerage deck each adult shall have 90 c. ft. space and at least 13 sq. ft. free floor area. For the lower steerage deck each adult shall have 110 c. ft. space and at least 16 sq. ft. free floor space. If steerage passengers are accommodated in the deck-house on the main deck the rules applying to the upper steerage deck shall apply. The lower steerage deck shall not be a temporary deck.

In the measurement of the main deck and steerage deck or deck-house the space occupied by the hospital or such portion of the passenger baggage stowed there may not be reckoned as free space. The deck-space for cabin passengers shall be kept closed to steerage passengers.

Every passenger over 12 years of age shall be reckoned as an adult. Two children between 1 and 12 are counted as one adult; children under 1 are not counted.

No one shall be reckoned as a cabin passenger unless he is allowed 34 sq. ft. floor space in the cabin and unless his contract secures him attendance and full board for the whole voyage at the captain's or officers' table.

The beams supporting the floors of the emigrants' quarters must be a permanent part of the ship. The floors must be properly nailed and not less than 1½ in. thick, tongued or caulked boards. The height from deck to deck shall be at least 5¾ ft.

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No ship, however, shall be required to carry more boats than are necessary to take all the passengers on board. Among these boats there shall be one longboat and one lifeboat, both suitable for their purpose and provided with all necessary appliances and kept ready for instant use all through the voyage. Four lifebuoys shall be so placed as to be instantly available; also a hose in perfect condition for service in the event of fire, and necessary lanterns and signalling apparatus for night and day use. If life-saving rafts are carried the number of boats may be reduced.

There shall be a separate kitchen for the preparation of emigrants' food provided with suitable cooking apparatus, sufficient in size to permit of a meal for all of them to be prepared at one time; also fuel at the rate of one load of coal and one cord of wood per 100 passengers for six weeks' voyage.

Each deck shall be connected with the upper deck as a rule by two hatchways, with convenient stairs protected on both sides. Hatchways shall be protected by a secure roof and tight doors and windows which can be opened and closed. This roof must in addition be provided with one or several suitable ventilators.

Water.—The water supply shall be in the proportion of 4 potters = 6·8 pints per adult (including crew), and same shall be preserved either in iron tanks or in strong internally charred wooden tanks. If the ship carries a distilling apparatus the water supply may be reduced to half, with the quantity that the apparatus is certified capable of producing. But at all times there shall be on board a supply of water in portable vessels for at least four days.

Hospital Accommodation.—Each emigrant ship shall have a specially arranged place for use as hospital; the same shall either be on deck in a solidly constructed deck-house or on the upper floor, and must not contain less than 17 sq. ft. floor space for each fifty passengers carried. This infirmary must be provided with berths, bedclothes and other appliances calculated on the basis of 4 per cent. of the number of passengers, and half of the berths shall be isolated, and the hospital shall be arranged to the satisfaction of the inspecting doctor.

Certificate to be granted by Inspector for undernoted emigrant ship,
 sailing on from to
 Name, style and building material of ship
 Where and when built
 Home port

Particulars to be given before permit is granted :—

Name of captain
 Name of owner
 Draught and tons
 Horse power
 Highest permitted steam pressure per sq. in.
 Classification
 Number of boats, of which lifeboats
 Other life-saving means
 Hospital: height .. ft., floor space . . . sq. ft.
 Number of cabin places
 Privies on deck, privies in steerage floors

PASSENGERS' QUARTERS AND MAXIMUM NUMBER OF PASSENGERS ALLOWED.

	Height in Feet.	Sq. Ft. Floor Space.	Space Cubic Feet.	Number of Cabin Passengers (Adults).
Cabin				

For steerage passengers :—

	Height in Feet.	Sq. Ft. Floor Space.	Space Cubic Feet.	Number of Steerage Passengers (Adults).
Deck-house				
Upper steerage deck				
Lower steerage deck.				
Total				

Main deck space sq. ft.

AALBORG.

Aalborg, in lat. 57°3' N., long. 9°55' E., is on the Liim Fiord, about 16 miles from the mouth.

Population.—31,509.

Imports.—Grain, fodder, coal, salt, wood.

Exports.—Chalk, cement, butter, beans, eggs, etc.

Accommodation.—At the entrance of the Liim Fiord, near Hals, there is a bar, across which there is a fairway having a depth of 24 ft. The depth of water in the Liim Fiord, between Hals and Aalborg, is from 30 to 50 ft., and the navigation offers no difficulties. The fairway across the bar has leading lights, and so has the fiord to Aalborg, and is thus navigable during the night. A lightship, which is at the same time a pilot station, is stationed near Hals. Tug-boats can be had outside Hals by hoisting a flag half-mast. The depth of water at the quays from Aalborg is 18 to 20 ft., and in the new harbour 22 ft. All railways starting from Aalborg are in direct connection with the harbour, so that loading and discharging can be done direct to and from railway waggons. Ships of any size can be careened here. The tide rises 1 ft. at Hals, and 1½ ft. at Aalborg. Under Aalborg Customs district are several wharves used for loading and discharging chalk and cement. Bunker coal, best kinds, is to be obtained at market rates. There is 10,500 ft. of quaysage and a 20 ton swinging crane.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 39 m. 36 s. local mean time.

Pilotage.—There are pilots at Hals as well as at Aalborg. Pilotage

Denmark—Aalborg (*continued*).

is compulsory for vessels drawing 16 ft. and upwards, over the bar. Rates as per tariff, according to the draught and tonnage.

Port Charges.—Harbour Dues:—10 öre per reg. ton inwards, and the same outwards. **Liim Fiord Expenses:**—Vessels passing the east mouth of Liim Fiord, 3 öre per reg. ton inwards, and the same outwards.

Dues for Wintering:—From December 15 to March 14 (both days included) vessels may lie in the harbour free of charge. After that 6 weeks for the harbour dues; after that they pay 1 öre per reg. ton weekly.

Ballast:—Sand, per load (about $1\frac{3}{4}$ tons) free on deck, 2 kr. 25 öre. **Ballast dues:**—1 öre per reg. ton. **Discharging:**—coal, 7d. per ton. **Towage:**—

As per agreement.

Pro Forma Charges on a steamer of 1,000 net reg. tons, coming to Aalborg with cargo in and out, drawing 17 ft. :—

	Kr.	öre.
Dues at Hals, at 3 öre per ton, in and out	60	00
Harbour dues at Aalborg, in and out, at 20 öre	200	00
Customs officer accompanying from Hals	5	66
Pilotage from sea to Aalborg, summer tax, 69 kr.; winter	91	00
" Aalborg to sea, " 69 kr.; " "	91	00
Harbour pilot mooring, in and out	10	00
Customs night-watch, say	20	00
Agency, including clearance fee and collecting freight, $16\frac{1}{2}$ öre per reg. ton	165	00
	<hr/> £34 0s. 8½d.	

AARHUUS.

Aarhuus, in lat. $56^{\circ}9' N.$, long. $10^{\circ}11' E.$, is a port on the E. coast of Jutland.

Population.—55,193.

Imports.—Coal, iron, wood, phosphate, grain, bran, and oilcake.

Exports.—Flour, butter, eggs, cattle, pork, beef, etc.

Accommodation.—The bay of Aarhuus is clear of all grounds from the point of Sletterhage, where there is a leading light to the harbour. There is a depth of 25 ft. in the entrance channel leading to the harbour, and $24\frac{1}{2}$ ft. along the south mole in the new and in the old basin and at the quay on the west side of the new basin. A depth of 22 ft. is available along about 800 ft. of the quays on the west side of the old basin. The total length of quays is 9,067 ft. and most of it has 24 ft. of water alongside. The port is easily reached by both steamers and sailing vessels. It has large warehouses and sheds and rails along all the quays connecting with all parts of Denmark. There are cranes to lift 5, 10 and 20 tons, and one portable crane capable of lifting 2 tons. Fog signals are given on the south harbour pier. Electric light has been installed along the quays. Fresh water is supplied by pipes or boats. A new harbour is now under construction. There is a patent slip with a lifting power of 150 tons.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 40 m. 52 s. local mean time.

Pilotage.—Inwards (compulsory) 2 öre per net reg. ton; when a pilot is taken, 3 öre per net reg. ton extra. Outwards (compulsory) 1 öre per net reg. ton; when a pilot is taken, 2 öre per net reg. ton extra.

Denmark—Aarhuus (continued).

Port Charges.—Harbour Dues :—10 öre per reg. ton in, and the same out. **Tugboat** :—Fixed rates with a maximum of 40 kr. **Ballast** :—as per agreement, usually 1 kr. per ton delivered alongside the vessel. **Ship-broker** :—16½ öre per net reg. ton inwards, and the same outwards. **Ship-dore** :—Discharging, 6d. to 8d. per ton.

Pro Forma Charges on a steamer of 1,000 reg. tons :—

Inwards—		Kr.	öre.
Harbour dues	.	100	00
Pilotage	.	50	00
Brokerage	.	125	00
Outwards—			
Harbour dues	.	100	00
Pilotage	.	30	00
Brokerage	.	40	00
Consular fees.	.	2	30
Customs officer : Fee and night-guard, about	.	40	00

487 30 = £27 1s. 6d.

ÆROESKIOBING.

Æroeskiobing, in lat. 54°53' N., long. 10°26' E., is on the island of Æro.

Population.—1,500.

Accommodation.—There is 10 ft. of water in the harbour, and 18 ft. in the roads.

Pilotage.—For a vessel of 100 reg. tons, 12 kr.

Port Charges.—Harbour Dues : 10 öre per reg. ton in and the same out ; in ballast, 2 öre per reg. ton. **Ballast** :—70 öre per ton.

ASSENS.

Assens is in lat. 55°17' N., long. 9°53' E.

Population.—5,000.

Imports.—Coal, timber, corn, feeding stuffs.

Exports.—Butter, eggs, sugar, preserved vegetables, corn.

Accommodation.—There are three harbours at Assens, viz., the northern harbour, in which there is a depth of 20 ft. ; the middle harbour, with 16 ft., and the southern with 12 ft. There are no tides. There is a pier running out into the middle and northern harbours, on which rails are laid. In the outer harbour there is 400 ft. of quayage with a depth of 20 ft., and 426 ft. with a depth of 16 ft. In the inner harbour there is 700 ft. with a depth of 14 ft. The port is also supplied with cranes and with a workshop for repairing machinery. A store of coal is kept.

Pilotage.—Vessels are piloted northwards to Veile and southwards to Svendborg at tariff rates.

Port Charges.—No wharfage, entrance fees, or light dues are charged here. **Clearance Fees** :—12 öre per reg. ton in, and the same out.

Towage :—By arrangement. **Ballast** :—1 kr. per ton. **Labour** :—8d. per ton. **Mooring** :—10 kr. **Brokerage** :—10 to 15 öre per reg. ton.

BANDHOLM.

Bandholm, in lat. 54°50' N., long. 11°26' E., is situated on the N. coast of Laaland, and is the port for the inland towns of Maribo and Rødby.

Denmark—Bandholm (*continued*).

Imports.—Coal, grain, oilcake, wood, chemical manures, etc.

Export.—Grain.

Accommodation.—Outer harbour—Depth at entrance, 15 ft.; width at entrance, 60 ft.; length of quayage, 632 ft.; depth at quayside, 9 ft.; length of jetty, 680 ft. Inner harbour—Length of quayage, 1,250 ft.; depth at quayside, $14\frac{1}{2}$ to 15 ft.; length of jetty, 980 ft. Railway lines run on the greater part of the quays.

Pilotage.—Rates according to a Government tariff, but moderate. Distance from the sea to the harbour is 12 miles. The pilot station is at Raagö, at the entrance beacon.

Port Charges.—Harbour Dues:—Loaded vessels, 15 öre per net reg. ton, in and out; empty vessels, 10 öre per net reg. ton in and out. **Ballast Dues:**—Taking in or discharging ballast at the ballast quay, 2 öre per net reg. ton. **Ballast:**—75 öre to 1 kr. per ton. Fresh water is supplied from a well in the harbour. Ordinary expenses for a modern steamer discharging about 1,300 tons of coal, about £22, exclusive of the cost of discharging. Ordinary expenses for an ocean-going steamer of about 1,500 net reg. tons, with a part cargo of grain or oilcake, about £45, exclusive of the cost of discharging.

BISSERUP.

Bisserup, in lat. $55^{\circ}13'$ N., long. $11^{\circ}31'$ E., is about 10 miles W. of Karrebeksminde. There is now no trade carried on at this port.

BOGENSE.

Bogense is in lat. $55^{\circ}33'$ N., long. $10^{\circ}4'$ E'.

Population.—2,300.

Accommodation.—There is from 11 to $11\frac{1}{2}$ ft. of water in the harbour, and 16 ft. in the roads.

Port Charges.—Harbour Dues:—14 öre per reg. ton in, and the same out; in ballast, 2 öre per reg. ton. **Ballast:**—1 kr. per ton.

BORNHOLM.

The island of Bornholm lies about 25 leagues E. of Denmark, and 7 leagues S. of Sweden. The harbours of Bornholm are of special importance in winter, as they are generally open as long as the Baltic is open on the W. side. It often affords shelter to vessels.

RÖNNE is in lat. $55^{\circ}7'$ N., long. $14^{\circ}43'$ E.

Population.—Island of Bornholm, 45,000. Rönne, 10,000.

Imports.—Coal, timber, etc.

Exports.—Corn, granite, pork, eggs, kaolin, and firebricks.

Accommodation.—Rönne harbour can be entered with all winds. There is 22 ft. of water at the entrance and 22 ft. inside the pier head, and in the inner harbour 16 ft. The harbour is sheltered from S.W. winds by a breakwater. Vessels can be repaired at moderate charges, and with dispatch.

Coal for steamers can always be obtained. Provisions are cheap.

Denmark—Bornholm (*continued*).

Pilotage.—Not compulsory, 5 öre per reg. ton for the first 200 reg. tons; 4 öre per reg. ton for the next 100 tons; 3 öre per reg. ton for the next 100 tons; 2 öre per reg. ton for the next 100 tons; and 1 öre per reg. ton for the next 100 tons in, and the same out.

Port Charges.—Harbour Dues:—30 öre per reg. ton. Vessels running in for contrary winds, without discharging or loading, 2 öre per reg. ton in, and 2 öre per reg. ton out. Steamers entering the harbour for coaling purposes, pay, for a stay of six days, 2 öre per reg. ton. **Ballast Dues:**—For loading or discharging ballast, 1 öre per reg. ton of ship's tonnage. **Keel-hauling:**— $\frac{1}{8}$ d. per reg. ton per day for the first month; $\frac{1}{16}$ d. per reg. ton per day for the second month. Vessels having to discharge in order to preserve cargo, pay half port charges. **Ballast:**—1s. per ton.

Pro Forma Charges on a steamer of 600 reg. tons, with a cargo of coal in, and ballast out, drawing 15 ft. loaded:—

	Kr.	öre.
Harbour dues at 30 öre per reg. ton	180	00
Brokerage	80	00
Pilotage in and out	40	00
Boat hire	12	00

312 00 = £17 6s. 8d.

NEXO is in lat. 55°3' N., long. 15°8' E.

Accommodation.—This harbour has a depth of water of 16 ft. There is a dry dock here, 170 ft. in length, 30 ft. wide at the entrance, and having a depth of 12 ft. on the sill.

Port Charges.—Harbour Dues (pilotage included):—30 öre per reg. ton. Ships running in for contrary winds, 5 öre per reg. ton. **Ballast Dues:**—10 öre per ton taken on board. Ships arriving and going into dry dock only, free. Pilotage for those vessels according to agreement.

SVANEKE is in lat. 55°8' N., long. 15°9' E.

Accommodation.—This harbour has a depth of water of 11½ ft.

Pilotage.—According to agreement.

Port Charges.—Harbour Dues:—20 öre per reg. ton. Ships running in for contrary winds, half. **Ballast Dues:**—10 öre per ton taken on board.

ALLINGE is in lat. 55°15' N., long. 14°50' E.

Accommodation.—There is a depth of water here of 11 ft.

Pilotage.—Not compulsory, 10 öre per reg. ton in, and the same out.

Port Charges.—Harbour Dues:—20 öre per reg. ton. Ships running in for contrary winds, half. **Ballast Dues:**—5 öre per reg. ton. **Warp Money:**—3 öre per reg. ton.

HASLE is in lat. 55°11' N., long. 14°43' E.

Accommodation.—There is a depth of water here of 14 ft.

Pilotage.—8 öre per reg. ton for the first 100 tons; 4 öre per reg. ton for every ton over 100.

Port Charges.—Harbour Dues:—17 öre per reg. ton in, and 17 öre per reg. ton out. **Ballast Dues:**—5 öre per reg. ton. Ships running in for contrary winds, half.

Nexo, Svaneke, and Allinge inner harbours or basins are all provided

Denmark—Bornholm (*continued*).

with solid dock gates, and ships when in the inner harbours of those places are quite safe with all winds.

COPENHAGEN (KJÖBENHAVN).

Copenhagen is in lat. $55^{\circ}42'$ N., long. $12^{\circ}33'$ E.

Population.—514,150.

Imports.—Coal, iron, manufactured goods, sugar, coffee, rice, guano, timber, grain, tar, flax, cement.

Exports.—Flour, grain, butter, provisions, eggs, horses, cattle, sheep, swine, wool, hides, etc.

Accommodation.—Copenhagen harbour is formed by a branch of the Sound running between the island of Amack and Zealand, and is divided into two ports—the old harbour and the Copenhagen Freeport, which latter was opened for traffic November, 1894. The entrance channel is called Kronelobet. At the outer end the available depth is 36 ft. The entrance between the outer breakwaters is 515 ft. in width. As far as the Freeport there is a minimum depth of 30 ft. From Freeport to Toldbod Bommen there is a depth of $26\frac{1}{2}$ ft. The old harbour is about 6,000 yards long, and consists of three parts, the first from the entrance to Knippelsbridge, the second between Knippelsbridge and Langebridge, and the third from Langebridge to the Gasworks. A new Knippelsbridge is (1908) in course of construction, giving a passage of 80 ft. The length of quayage belonging to the Harbour Commissioners is 40,200 ft.; and to the Government, town, and private enterprise 38,200 ft. There is a dry dock, about 240 ft. long, and several yards for repairing vessels. The outer harbour, to the north of the inner harbour, with a depth of 26 ft. of water, is a sheltered and perfectly safe anchoring place, and as no dues are levied it is much frequented by vessels calling for orders, or steamers for bunker coal. On the E. side is situated Messrs. Burmeister and Wain's shipbuilding and engineering establishment, with three patent slips capable of receiving vessels up to 2,500 tons burden, and a dry dock capable of taking any size of vessel—the dock being 455 ft. long, 65 ft. wide at the entrance, and 23 ft. on the sill. This company has recently acquired a large floating dock with a capacity of 11,500 tons weight, 600 ft. long, 77 ft. wide, draught forward 23 ft., draught aft 26 ft. A company has built in the old harbour a floating dock capable of taking vessels up to 2,900 tons d.w., for executing temporary repairs, painting of ships' bottoms, etc. The Government have a small dock and there are two private patent slips. Near Burmeister and Wain's wharf there are several coal depôts.

On the western side of the inner roads the Freeport is situated. This port consists of four large basins or docks: (1) The Northern basin, with a depth of 24 ft. 6 in. and 3,100 ft. of quays. (2) The Middle basin, with a depth of 24 ft. 6 in. and 2,200 ft. of quays. (3) The Western basin, with a depth of 26 ft. 6 in. and 2,300 ft. of quays. (4) The Eastern basin, with 30 ft. of water, and 5,500 ft. of quays, and a fairway mole 309 ft. long.

In the Freeport are cranes as follows: One travelling crane to lift 20 tons, seven travelling cranes to lift $1\frac{1}{2}$ ton each, five travelling cranes to lift $2\frac{1}{2}$ tons each, and three travelling cranes to lift 5 tons each. Also seven travelling 2 ton cranes for discharging 80 tons of coal each per hour. Coal silos,

Denmark—Copenhagen (Kjöbenhavn) (*continued*).

storage space for 60,000 tons of coal. Two grain silos, storage space for 10,000 and 11,000 tons of grain respectively, three sheer legs capable of lifting 120, 150 and 200 tons of grain per hour respectively.

In the harbour are cranes as follows : Orlogsværftet's floating crane to lift 50 tons, one floating crane to lift 40 tons, four stationary cranes, two to lift 25 tons, and two to lift 15 tons and 10 tons respectively, and nine small cranes ; two Temperley coal cranes, and five Hunt's coal cranes (2 tons) ; three sheer legs for grain.

The harbour entrance is protected by a breakwater, and for the guidance of ships entering at night powerful lights are provided. The breakwater is a fine piece of engineering, being built by divers in deep water—the foundations consisting of 35 ton blocks of concrete, keyed together with small blocks. The above water portion is of dressed granite.

The outer roads have a depth of water up to 30 ft., and good anchorage : windbound sailing vessels and large men-of-war generally ride here.

Large steamers passing through the bridges require tug steamers for assistance, and contract prices vary according to size and distance.

The brokers are sworn, and the brokerage for all services is fixed by law.

On arrival, or reporting at the Custom House, captains obtain the printed regulations for preserving order in the inner roads and the harbour, which must be strictly followed.

Custom House officers keep a sharp control over ships loading and discharging, and captains ought to be very particular and careful with their reports. Concealed entrances to the holds, loose frames in hatches, loose bulkheads, false bolts, or any other contrivance whereby the Custom House seal may be rendered ineffectual, has caused many ships heavy fines.

Petroleum cargoes are not allowed to be discharged in the harbour, and ships loaded therewith must anchor in the outer roads ; they are sent to Tuborg harbour, about $1\frac{1}{2}$ English miles north of Copenhagen, where there is 15 ft. of water. Port charges at Tuborg are 50 öre per reg. ton higher than at Copenhagen. Tank steamers discharge petroleum into tanks on Rephale Island in the inner roads. The Emil Z. Svitzers Salvage Company has its headquarters at Copenhagen, and salvage steamers provided with the best apparatus are always lying ready to assist vessels in distress, at the shortest notice.

Time Signals.—Chronometers can be checked. A wicker ball is hoisted half-way up on the Nikolai Tower 5 minutes before the signal, and close up 3 minutes before. The ball is dropped at 1 h. 0 m. 0 s. Mid-European time, equal to noon Greenwich mean time and 0 h. 50 m. 20.5 s. local mean time. The time can always be obtained from the Pilot Inspector.

Pilotage.—According to the draught and tonnage of a vessel. For instance, a steamer of 1,000 reg. tons, drawing 20 ft. from the outer roads to the harbour—37 kr. 80 öre ; from the harbour to the outer roads, drawing 18 ft., 31 kr. 92 öre.

Port Charges.—In the Freeport no Customs dues of any kind are levied. **Quay Money :**—Steamers, 6 öre per net reg. ton per month, plus 10 öre per ton on the quantity of goods discharged or loaded at the quays belonging to the harbour ; if discharging or loading at private quays 50 per

Denmark—Copenhagen (*Kjöbenhavn*) (continued).

cent. extra. **Ballast** : Prices vary according to quality, gravel or sand 1kr. 8 öre per ton; stones, 2 kr. per ton.

Pro Forma Charges on a steamer of 1,167.17 reg. tons with a cargo of coal from Newcastle :—

	Kr.	öre.
Wharfage for delivery	184	16
Brokerage for clearing inwards	150	05
Brokerage for clearing outwards	75	03
Pilotage inwards	25	00
Pilotage outwards	23	00
Quarantine dues	1	00
Boat hire	1	00
Running out warps	14	00
Consular fees and English Church	6	28
Stamps for permits to leave before clearance	6	66
Labourage for discharging coal, 55 öre per ton with winches ; 9½ öre per ton with cranes (say 2,500 tons at 55 öre).	1375	00

1861 18 = £103 7s. 11d.

EBELTOFT.

Ebeltoft is in lat. 56°13' N., long. 10°41' E.

Population.—1,600.

Accommodation.—There is 18 ft. of water in the harbour and its approaches.

Pilotage.—6 öre per gross reg. ton inwards; 5 öre per gross reg. ton outwards. From October 1 to March 31 one-third extra is charged.

Port Charges.—**Harbour Dues** :—12 öre per reg. ton in, and the same out. **Ballast Dues** :—4 öre per net reg. ton. **Ballast** :—As per agreement.

ELSINORE.

Elsinore (or Helsingör), in lat. 56°2' N., long. 12°36' E., is situated on the Danish side of the northern entrance to the Sound, and is about 24 miles from Copenhagen.

Population.—14,534.

Imports.—Wine, spirits, coffee, sugar, tobacco, salt, coal, iron, and cotton.

Exports.—Barley, oats, flour, meal, ship bread, butter, salt beef, pork, rope for sailing ships.

Accommodation.—The roadstead has space for any number of ships, and they can ride in perfect safety. It is much frequented by vessels detained by adverse winds. The entrance to the harbour is 160 ft. wide and 25 ft. deep; the extreme width of the harbour is 350 ft., and there are four quays—1,900 ft. with a depth of 25 ft., 900 ft. with a depth of 22 ft., 1,800 ft. with a depth of 20 ft., 200 ft. with a depth of 18 ft. There is a crane to lift 10 tons and one to lift 4 tons.

Lights and fires are allowed on board until 10 p.m. Steam tugs are stationed here, and regular pilots may be had, not only to take charge of vessels past the Kullen and Dragoe Lights, but to the entrance of all the Danish and Swedish harbours in the Sound. Shipmasters anchoring off Elsinore are advised to employ the boatmen, who invariably come off to the vessels; charge as per agreement. The works of the Elsinore Iron Ship-building and Engineering Co. are well adapted for building and repairing

Denmark—Elsinore (continued).

iron and steel vessels, and engines of any size. This company has built two graving docks, one 320 ft. long, 40 ft. wide at the bottom and 70 ft. at the top, and with $13\frac{1}{2}$ ft. of water on the blocks; the other is 367 ft. long. There is a 45 ton steam sheer legs on the quay. There is also a patent slip capable of receiving vessels of 750 tons. Water is supplied by water boats which ply in the roadstead. All kinds of supplies are obtainable. Steamers can lie close up to the coal depôts.

Time Signals.—Chronometers can be checked. A wicker ball is hoisted half-way up the mast on the Quarantine and Pilot House on the south mole of the harbour, 5 minutes before the signal, and close up 2 minutes before. The ball is dropped at 1 p.m. Mid-European time, equal to noon Greenwich mean time and 0 h. 50 m. 29.6 s. local mean time.

Pilotage.—According to the gross tonnage of a vessel.

Port Charges.—Harbour Dues:—11 öre per reg. ton inwards, and the same outwards. **Ballast:**—1s. 1d. to 1s. 2d. per ton alongside. **Steve-dore:**—Discharging coal, 8d. per ton.

Steamers putting in here for coals only can remain in the harbour for four days free of charge. Ships seeking the harbour for the repair of damages are free of pier and quay dues when they take out the whole cargo again, whether that has been discharged or not. If any part of the cargo has to be left, then such dues are chargeable, inward and outward, on the tonnage of that part. When seeking the harbour for preservation of cargo, or on account of the stoppage of the pumps, and the whole cargo is again carried out, the inward dues are chargeable.

Pro Forma Charges on a steamer of 770 net tons, arriving here with coal, and leaving in ballast:—

	Kr.	öre.
Harbour dues, in and out	140	80
Pilotage in	17	50
Pilotage out	7	20
Boat assistance	12	00
Clearance	113	40
	<hr/>	
	290	90 = £16 3s. 2d.

ESBJERG.

Esbjerg, in lat. $55^{\circ}29'$ N., long. $8^{\circ}28'$ E., is on the W. coast of Denmark.

Population.—16,655.

Imports.—Coal, timber, manure, soda, grain, oilcake, colonial produce, manufactured goods, etc.

Exports.—Cattle, sheep, butter, bacon, eggs, beef, yeast, fruit, fish, hay, straw, horses, and pigs.

Accommodation.—There are two harbours and a wet dock. The tidal harbour is in two portions, the inner half has a depth of 15 ft. at high water and 10 ft. at low, with 900 ft. of quays; the outer half has a depth of 19 ft. at high water and 14 ft. at low, with 1,100 ft. of quays; the width of the entrance is 200 ft.; there are cranes to lift from 2 to $6\frac{1}{4}$ tons. The fishing harbour has 1,300 ft. of quays; the depth is 18 ft. at high, and 13 ft. at low, water; the width of the entrance is 150 ft. The wet dock is 800 ft. long and from 200 to 800 ft. wide with 2,600 ft. of quays;

Denmark—Esbjerg (*continued*).

the width of the entrance is 50 ft. until a depth of 13 ft., high water ordinary spring tide, from thence it decreases $1\frac{1}{2}$ ft. for each foot increase in depth; the depth of water on the sill is 18 ft. 5 in.; there are cranes to lift from 4 to 10 tons. Coal can be had on the quay.

Pilotage.—According to the gross tonnage and draught of a vessel.

Port Charges.—Towage:—By the tugboat of the harbour. From outside the bar to the harbour, and vice versa, 40 öre per net reg. ton; from the roads to the harbour, and vice versa, 20 öre per net reg. ton. Private tugs are generally to be had at a lower rate. **Harbour Dues:**—10 öre per net reg. ton inwards, and the same outwards. **Discharging:**—Coals, 8*d.* per ton; manure, 50 öre per ton; heavy grain, 70 öre per ton; sunflower cake, 1 kr. 5 öre per 1,000 kilos.; cottonseed cakes, 70 öre per 1,000 kilos. Custom House watchmen, 4 kr. per night and holidays. Insurance of labourers, $3\frac{1}{2}$ per cent.

Pro Forma Charges on a steamer of 1,311 gross tons (811 net tons) drawing $17\frac{1}{2}$ ft. in and $11\frac{3}{4}$ ft. out:—

	Kr.	öre.
Pilotage inwards	58	00
Pilotage outwards	46	00
Harbour dues in	81	10
Harbour dues out	81	10
Boat assistance	18	00
Clearance	125	00
	<hr/> 409 20 = £22 14 <i>s.</i> 7 <i>d.</i> <hr/>	

FAABORG.

Faaborg, in lat. $55^{\circ}7' N.$, long. $10^{\circ}14' E.$, is on the S. coast of the island of Fyen.

Population.—4,500.

Imports.—Coal, timber, grain, oilcake, etc.

Exports.—Provisions.

Accommodation.—The harbour has been considerably enlarged and has a depth of 21 ft. There is 1,838 ft. of quayage with the railway running along it. Fires and lights are allowed on board. There is a patent slip with a lifting power of 200 tons.

Pilotage.—According to the draught and tonnage of the vessels.

Port Charges.—Harbour Dues:—12 öre per reg. ton in, and the same out; in ballast, 2 öre per reg. ton. **Ballast:**—1 kr. per ton. **Stevedore:**—Discharging, 7*d.* per ton.

FAXOE.

Præsto, on Faxoe Bay, in lat. $55^{\circ}13' N.$, long. $12^{\circ}9' E.$, lies on the S.E. coast of the island of Sicælland.

Imports.—Coal, timber, etc.

Exports.—Barley and lime.

Accommodation.—There is 11 ft. of water on the bar, and $11\frac{1}{2}$ ft. in the harbour. With the wind strong from the S.E. it is sometimes difficult to proceed to sea.

Port Dues.—12 öre per ton.

Denmark.

FREDERICIA.

Fredericia, in lat. $55^{\circ}35'$ N., long. $9^{\circ}44'$ E., is at the entrance of the Little Belt from the Kattegat.

Population.—13,457.

Imports.—Coal, timber, iron, and salt.

Exports.—Corn, cattle, butter, and eggs.

Accommodation.—Large vessels anchor in 8 to 10 fathoms, and the anchorage is considered safe. Vessels of 18 to 20 ft. draught can safely enter the harbour. The length of the basin is 800 ft. and the width 150 ft.; the depth of the entrance is 20 ft. and the total length of quayage 2,000 ft.; the width of the entrance to the harbour is 60 ft. and the depth inside varies from 18 to 20 ft. Fires and lights are allowed on board. Tugboat not necessary.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 39 m. 0 s. local mean time.

Pilotage.—Pilots can always be obtained. Rates are according to a fixed tariff.

Port Charges.—**Harbour Dues:**—10 öre per reg. ton in, and the same out; in ballast, 2 öre per reg. ton. **Ballast:**—1 kr. per ton.

Discharging:—Coal, 7d. per ton.

FREDERIKSHAVN.

Frederikshavn, in lat. $57^{\circ}26'$ N., long. $10^{\circ}32'$ E., is situated in the Northern Kattegat, on the east coast of Jutland, about 22 miles south of the Skaw.

Population.—7,176.

Imports.—Coal, wood, iron, salt, grain, bran, manure.

Exports.—Butter, eggs, beef, pork, fish.

Accommodation.—The harbour has a total water area of 90 acres, of which the outer harbour claims 44 acres. The depth at the entrance to the outer harbour at ordinary level is $22\frac{1}{2}$ ft. and to the inner harbour $22\frac{1}{2}$ ft. at low water. The length of quayage is 4,000 ft. with a depth alongside of from 10 to 22 ft. There is good anchorage in the outer harbour, the depth of $22\frac{1}{2}$ ft. is found in the greater part of the outer harbour, and also in the eastern basin of the inner harbour. In the south part of the western basin of the inner harbour the depth is $20\frac{1}{2}$ ft.; in the other part the depth is less. There is a crane to lift 10 tons.

The general difference in the height of water is 1 foot. The current, which is never very strong outside the entrance to the harbour, runs across the same. The strongest and most frequent current runs from S.W. to N.E. The main channel to the harbour is S. and W. of Laurs Reef. In navigating at night S. of Laurs Reef, mariners may be guided by the two red harbour lights in one towards the harbour. In making for the harbour from S. in foggy weather the 4 fathom curve should be followed by casts of the lead. There is a bell buoy S.E. of Laurs Reef. At the northern outer pierhead there is a fog-horn, worked by electricity.

Large supplies of coal, provisions, and all other stores of good quality
D.C. F

Denmark—Frederikshavn (continued).

are always at hand. The number of steamers putting in for bunker coals is increasing yearly; in 1907 about 500 to 600 steamers called for coal. Coal is supplied direct from the quay at once on arrival, day and night, 20 to 30 tons in an hour. Steamers bunkering only have no harbour dues to pay if not staying above 72 hours. Water is supplied through hoses at all the quays of the harbour. Wooden ships are repaired at the dockyards, and minor repairs of iron ships and engines are carried out at the engine works. A tugboat and one of Svitzer's salvage steamers are stationed at Frederikshavn. Steamship communication with Copenhagen twice a week, Gothenburg daily, Christiania twice a week, Christiansand daily, and Newcastle once a week. There is a floating dock, with a carrying capacity of 1,700 tons, which can take vessels up to 200 ft. in length.

Pilotage.—At the southern outer pierhead there is a watch-station for pilots keeping watch day and night from Frederikshavn, who, beside piloting to the harbour, also pilot northwards to the Skaw and southwards to the Sound, Nyborg, Korsør, and Fredericia. Pilots are also stationed at Hirsholmen, and at the Skaw a pilot steamer from which pilots go to the same places as the pilots from Frederikshavn.

Rates according to draught and gross tonnage and for what purpose call is made. For instance, a steamer of 900 to 1,000 gross reg. tons, drawing from 14 ft. 9 in. to 16 ft. 5 in. putting in for bunker coal only pays: Summer—in, 16 kr.; out, 11 kr.; winter—in, 21 kr.; out, 15 kr. If for discharging cargo and out with ballast the charges on similar steamer would be: Summer—in, 20 kr.; out, 16 kr.; winter—in, 27 kr.; out, 21 kr.

Port Charges.—Harbour Dues:—10 öre per ton, inwards or outwards; if more than 4 weeks, 2 öre per ton per week extra. Vessels putting in without discharging or loading, and not staying more than 14 days, pay only inward dues. **Ballast:**—1 kr. 50 öre per ton. **Brokerage:**—16½ öre per ton inwards, and the same outwards.

Pro Forma Charges on a steamer of 600 net reg. tons (950 gross reg. tons), coming from England with a cargo of coal, and bound for a foreign port with ballast:—

	Kr.	öre.	
Inward tonnage and harbour dues, 10 öre per ton	60	00	
Outward tonnage and harbour dues, 10 öre per ton	60	00	
Inward pilot, 15 ft. (winter, 27 kr.); summer	20	00	
Outward pilot, 11 ft. (winter, 21 kr.); summer	16	00	
Boat assistance, in and out	10	00	
Telegrams and postage	8	00	
Commission for clearing, in and out, collecting freight	100	00	
	274	00	£ s. d.
			15 4 5
Discharging coal, 7d. per ton (say 1200 tons).			35 0 0
			£50 4 5

FREDERIKSSUND.

Frederikssund, in lat. 55°50' N., long. 12°5' E., is 14 miles N. of Roeskilde.

Population.—2,500.

Accommodation.—There is 10 ft. of water in the channel and harbour.

Denmark—Frederikssund (*continued*).

Port Charges.—Harbour Dues:—10 öre per reg. ton in and the same out; in ballast, 2 öre per reg. ton.

FREDERIKSVAERK.

Frederiksvaerk, in lat. 55°58' N., long. 12°2' E., is on the Roeskilde Fiord.

Population.—1,700.

Accommodation.—There is 9½ ft. of water in the channel and harbour, and 10½ ft. in the roads.

Port Charges.—Harbour Dues:—6 öre per reg. ton in, and the same out; in ballast, 2 öre per reg. ton. **Ballast:**—80 öre per ton.

GJEDSER.

Gjedser is in lat. 54°35' N., long. 11°57' E.

Import.—Coal.

Accommodation.—There is a depth of water in the harbour of 16 ft. Railway connection with Copenhagen and Berlin.

Pilotage.—Compulsory. Rates are according to the tonnage and draught of a vessel.

Port Charges.—Harbour Dues:—8 öre per reg. ton. **Boat Hire:**—10 kr. **Ballast:**—1 kr. per ton.

Pro Forma Charges on a steamer of 1,000 tons reg. with a cargo of coal in, and ballast out, drawing 16 ft. loaded:—

	Kr.	öre.
* Harbour dues, at 8 öre per reg. ton	80	00
Pilotage, in and out	60	00
Boat hire	20	00
	160	00 = £8 17s. 9d.

GRENAA.

Grenaa, in lat. 56°26' N., long. 10°53' E., is a small port on the E. coast of Denmark.

Population.—3,500.

Imports.—Coal and timber.

Accommodation.—There is 14 ft. of water in the harbour. The town stands about a mile within the entrance. Vessels of larger draught anchor in the roadstead in 4½ fathoms on good holding ground.

Pilotage.—Rates according to register tonnage and draught of the vessel.

Port Charges.—Harbour Dues:—15 öre per reg. ton inwards, and the same outwards; in ballast, 4 öre per reg. ton. **Ballast:**—75 öre per reg. ton. **Leading Rope:**—10 to 15 kr. per vessel. **Clearance:**—15 öre per reg. ton. **Stevedore:**—Discharging coal, 7d. per ton.

Denmark—Grenaa (*continued*).

Pro Forma Charges on a steamer of 262 reg. tons coming from England with a cargo of coal :—

	Kr.	öre.
Inward harbour dues	39	30
Outward harbour dues	39	30
Custom House night watch	4	00
„ clearing after time	1	33
Pilotage in, 12 ft. ; and out, 8 ft. (winter, 42 kr.)	32	00
Rope leading	10	00
Discharging 363 tons at 7 <i>d.</i> per ton	193	43
Postage and telegrams	9	50
Commission for clearing in and out	40	00

368 86 = £20 9*s.* 11*d.*

HAMMEREN.

Hammeren Harbour, in lat. 55°16' N., long. 14°48' E., lies W. of Hammeren Point, about 2 miles from Allinge ; it is specially built for the export of granite. There is 15 ft. of water in the harbour.

Pilotage.—Not compulsory ; 8 öre per reg. ton up to 100 tons, and 4 öre per reg. ton above 100 tons.

Port Charges.—**Harbour Dues** :—15 öre per reg. ton in, and the same out. **Ballast Dues** :—5 öre per reg. ton.

HJERTING.

Hjerting is in lat. 55°33' N., long. 8°20' E.

Exports.—Cattle, etc.

Accommodation.—The depth of water in the channel is 2 to 5 fathoms. Half a mile S. of Hjerting is a ridge of sand which divides the channel into two, each 138 yards wide. The anchorage is to the N. of this ridge, where there is a breadth of 1½ cables across the channel, in 9 to 12 ft. of water, sand, and mud. A little to the N. of Hjerting there is a wooden pier with 11 ft. at end at ordinary low water.

HOBRO.

Hobro, in lat. 56°39' N., long. 9°47' E., is on the Mariager Fiord.

Population.—3,500.

Exports.—Chalk and cement.

Accommodation.—There is a depth of 14 ft. on the bar at the entrance to the Fiord. The same depth is available the whole way up to and in Hobro Harbour. In the Fiord is an outer harbour called Hadsund, belonging to the harbours of Hobro and Mariager. Here there is anchoring ground, quays, etc. There is a swing bridge at Hadsund connecting the north and south side of the Fiord. The depth of water in Hadsund is 14 ft. There is a crane in the harbour at Hobro. Tugboats are always available.

Pilotage.—Not compulsory. Pilot can be obtained at Als-Odde by a flag on the foretop mast ; a tug if the flag is halfmast. Rates are according to the draught and gross tonnage of a vessel. For instance, for a vessel of 450 to 500 gross tons, drawing 12½ to 14 ft. : From the sea to the cement works—summer, 34 kr. ; winter, 45 kr. ; from the cement

Denmark—Hobro (*continued*).

works to Mariager—summer, 37 kr.; winter, 49 kr.; from the cement works to Hobro—summer, 44 kr. 10 öre; winter, 59 kr. 30 öre.

Port Charges.—Harbour Dues:—Sailing vessels, 12 öre per net reg. ton in, and the same out; steamers, 15 öre per reg. ton in, and the same out.

Tugboat.—From the roadstead to the cement works, 50 öre per net reg. ton; to Hobro, 75 öre per net reg. ton. **Discharging:**—Coal, 7*d.* per ton.

Ballast:—80 öre per ton.

HOLBEK.

Holbek, in lat. 55°42' N., long. 11°43' E., stands on one of the arms of the Ise Fiord, about 16 miles from the entrance.

Population.—About 5,000.

Imports.—Coal, etc.

Export.—Barley.

Accommodation.—The harbour is compact and well sheltered, being safe in the winter time, but it can only receive vessels of 12 ft. draught.

Port Charges.—Harbour Dues:—12 öre per reg. ton in, and the same out; in ballast, 3 öre per reg. ton. **Ballast:**—100 öre per ton.

Pro Forma Charges on a ship of 199 tons:—

	Kr.	öre.
Clearance inward—		
Brokerage on clearance inward, 12½ öre per ton	24	87
Harbour dues, 12 öre per ton	23	88
Summer pilotage from sea and Rörvig, 11 feet.	33	25
Clearance outward—		
Brokerage on ship's clearance, 4 öre per ton	7	96
Pier money on ballast, 3 öre per ton	5	97
Harbour dues, 12 öre per ton	23	88
Summer pilotage to Rörvig and sea, 7 ft. 9 ins.	28	25
Ballast, 50 tons at 100 öre	50	00
	198	06 = £11 0 <i>s.</i> 1 <i>d.</i>

Pilotage in winter from October 1 to March 31, 11 ft.—kr. 44·75; 7 ft. 9 in.—kr. 37·25.

HORSENS.

Horsens, in lat. 55°52' N., long. 9°50' E., is on the E. coast of Jutland, and stands at the head of the fiord of the same name, about 25 miles S.W. of Aarhus.

Population.—22,327.

Imports.—Coal, iron, wood, phosphates, slates, grain, oilcake, bran, sleepers.

Exports.—Corn, tallow, bones, butter, eggs, cattle.

Accommodation.—The harbour has 18 ft. of water at ordinary high tide. There is 3,600 ft. of quayage with a depth alongside of from 13 to 20 ft. Steamers drawing 18 ft. can get up to the town. Vessels of greater draught can anchor in a good and safe anchorage, four miles below the town. Vessels of 400 ft. length can turn in the harbour.

There is a crane to lift 6 tons.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 39 m. 24 s. local mean time.

Denmark—Horsens (*continued*).

Pilotage.—According to the draught and tonnage of the vessel. For instance, a vessel drawing 16½ to 18 ft. :—

500 reg. tons, summer	.	.	17 kr.	winter	.	.	23 kr.
1,000 " " "	.	.	23 kr.	"	.	.	30 kr.
1,500 " " "	.	.	26 kr.	"	.	.	35 kr.
2,000 " " "	.	.	31 kr.	"	.	.	39 kr.

Port Charges.—Harbour Dues :—10 öre per reg. ton in, and the same out. **Ballast Dues** :—Vessels entering or leaving the harbour in ballast pay 2 öre per reg. ton. **Ballast** :—80 öre to 1 kr. 10 öre per ton. **Brokerage** :—16½ öre per ton. For collecting and guaranteeing the freight brokers charge ½ per cent. Fresh water to be obtained from the quay, 3 öre per reg. ton up to 200 tons, and 2 öre for each additional ton. **Discharging** :—Coals, 7*d.* per ton d.w. **Steam Tug** :—To or from the roads, 20 ore per reg. ton up to 100 tons, and 10 öre for each additional ton. **Boats**, for making fast and shifting the ropes, 5*s.* to 20*s.*, according to size.

Pro Forma Charges on a steamer of 720 tons reg. with cargo of 1,200 tons coal, drawing 16 ft. ; water ballast out, drawing 11 ft. :—

	Kr.	öre.	
Inwards—			
Harbour dues	72	00	
Pilotage from roads (winter, 29 kr.) ; summer	21	00	
Diet money to Customs officers (winter, 37 kr.) ; summer	16	00	
Harbour master and mooring	6	00	
Clearance fee	90	00	
Outwards—			
Harbour dues	72	00	
Pilotage to roads (winter, 24 kr.) ; summer	18	00	
Tug-boat, out and swinging	45	00	
Harbour master and boatmen	6	00	
Clearance fee	28	80	
	374	80	£ s. d.
Discharging cargo at 7 <i>d.</i> per ton			35 0 0
			£55 16 6

KALLUNDBORG.

Kallundborg is in lat. 55°42' N., long. 11°8' E.

Population.—5,000.

Accommodation.—The general depth in Kallundborg is 7 fathoms. Large vessels anchor in 5 fathoms, midway between the Point and the As Ness shore. W. and N. winds cause some swell, but the holding ground being good, vessels ride easily. Small vessels can run within Grisselore Point, and anchor between the point and the pier. From this anchorage there is a channel leading to the harbour. The harbour is 960 ft. long, 330 ft. wide, and 120 ft. wide at both entrances; the depth at the entrance is 18 ft., and the length of quayage 1,500 ft., of which 960 ft. has 18 ft. of water alongside and the railway running along it; 230 ft. has 15 ft. of water alongside; 310 ft. has 8 to 10 ft. of water alongside.

Operations are now in progress to extend the harbour and increase the depth to over 18 ft. There is a bright revolving light at Grisselore.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 44 m. 24 s. local mean time.

Denmark—Kallundborg (continued).

Pilotage.—According to the tonnage and draught of a vessel, for example :—

	Winter.	Summer.
Steamer, 600 to 700 net register tons . . .	kr. 30	kr. 23, in and out.
Sailing vessel, 100 to 200 net reg. tons . . .	kr. 19	kr. 14-50 „ „

Port Charges.—**Harbour Dues** :—10 öre per reg. ton in, and the same out ; in ballast 3 öre. **Ballast** :—1 kr. 15 öre per ton.

KARREBEKSMINDE.

Karrebeksminde, the port of Nestved, is in lat. 55°12' N., long. 11°39' E.

Accommodation.—The depth of water in the outer harbour is 18 ft. ; in the inner harbour at the pier there is 15½ ft. Vessels above this draught can load or unload in the roadstead, in 4 fathoms of water, with good holding ground (should have ground tackle) about a third of a mile from the shore. Vessels discharge part of their cargoes at the mole in the outer harbour. There is 600 ft. of quayage with 15½ ft. alongside, and 1,400 ft. with from 8 to 15 ft. alongside. The goods discharged from vessels are conveyed to Nestved in lighters towed by steamers. Nestved is about 5 miles from the port by land, or about 8 miles by water, and can only be reached by vessels of 6½ ft. draught. The Custom House is situated at Nestved.

Pilotage.—Compulsory. When a vessel approaches Karrebeksminde a pilot comes off at once.

Port Charges.—**Harbour Dues** :—12 öre per reg. ton in, and the same out ; in ballast, 2 öre per reg. ton. **Ballast** :—1 kr. per ton.

Discharging :—Coal, 55 öre per ton.

KJERTEMINDE.

Kjerteminde is in lat. 55°28' N., long. 10°38' E.

Population.—2,700.

Imports.—Coal, timber, oil-cake, bran, etc.

Export.—Grain.

Accommodation.—The harbour is 1,400 ft. long, 200 ft. wide, 15 ft. deep, 110 ft. wide at the entrance, 16 ft. deep at the entrance, 352 ft. of quayage with 15 ft. alongside, and 800 ft. of quayage with 14 ft. alongside. The railway runs down to the harbour. Fresh water can be had.

Pilotage.—Inwards from Mollegrunden to Kjerteminde, vessels drawing 5 ft., 2 kr. 20 öre in summer ; 3 kr. 73 öre in winter ; 56 öre more for each additional foot in summer, and 75 öre in winter. Outwards from Kjerteminde to Mollegrunden, 2 kr. in summer, and 2 kr. 67 öre in winter ; 40 öre more for each additional foot in summer, and 53 öre in winter.

Port Charges.—**Harbour Dues** :—15 öre per reg. ton in, and the same out ; in ballast, 3 öre per reg. ton. **Ballast** :—75 öre per ton.

KJÖGE, OR KIÖGE.

Kjöge, or Kiöge, in lat. 55°26' N., long. 12°12' E., is situated about 21 miles S.S.W. of Copenhagen.

Population.—4,000.

Denmark—Kjöge, or Kiöge (*continued*).**Imports.**—Coal, iron, timber, bran, oilcake, etc.**Export.**—Grain.**Accommodation.**—The harbour is 69 ft. wide at the entrance, and 16 ft. deep. The outer quay has a depth alongside of 14 ft., and the inner quay 10 to 14 ft., the total length of quayside being 1,030 ft. The port has been deepened to 16 ft. in the channel, running up the middle of the harbour. The railway runs along the quay.**Pilotage.**—From sea into port, in summer, 1 kr. 50 öre to 2 kr. per foot of draught; from sea into port, in winter, 2 kr. to 2 kr. 50 öre per foot of draught. From port to sea, in summer, 1 kr. 30 öre to 1 kr. 50 öre per foot of draught; from port to sea, in winter, 1 kr. 50 öre to 1 kr. 75 öre per foot of draught.**Port Charges.—Port Dues:**—12 öre per ton inwards and the same outwards. **Ballast:**—100 ore per ton. Ships discharging or taking ballast pay 3 öre per ton ballast dues. **Water:**—2 öre per reg. ton.**Pro Forma Charges** on a steamer of 500 reg. tons, from England, with 1,000 tons of coal, outwards in ballast to Sweden:—

Inward—		Kr.	öre.
Harbour dues at 12 öre per ton		60	00
Pilotage, 16 ft., winter at 2'50 kr.		40	00
Boatmen		5	00
Overtime for Customs officers, about		30	00
Commission		60	00
		—————195 00	
Outward—			
Harbour dues at 12 öre per ton		60	00
Pilotage, 11 ft., winter at 1'50 kr.		16	50
Boatmen		5	00
Harbour master		2	00
Harbour pilot		2	00
Ballast, 100 öre per ton and 3 öre per ton dues		103	00
		—————188 50	
		383	50 = 21 6 1½
Discharging coal, 1,000 tons at 7d. per ton			29 3 4
			£50 9 5½

KLINTEBJERG.

Klintebjerg is a small place half way up the Odense Fiord, where vessels can discharge safely. Expenses the same as at Odense, except pilotage.

KOLDING.

Kolding is in lat. 55°29' N., long. 9°29' E. The harbour of Kolding stands at the head of Kolding Fiord, about 13 English miles from Fredericia, in the entrance to the Belt.

Population.—13,451.**Imports.**—Grains, oilcake, coal, timber, etc.**Exports.**—Butter, eggs, cattle, and pork.**Accommodation.**—There is a broad and safe channel, carrying about 5 fathoms of water, from the entrance to the Fiord to within a mile and a half the town. From there to the harbour there is a dredged channel 100 ft. broad, and carrying 20 ft. of water to the harbour, the channel being properly defined by perches and buoys. By night, two fixed red lights placed to the northward of the harbour, brought in line,

Denmark—Kolding (continued).

lead to the entrance; two green lights, in line, lead up the harbour, those being also placed to the northward of the harbour. There is a shipyard here with all appliances for repairs, there being a patent slip for small vessels, larger ships being hove down in the usual manner. The harbour has direct communication with the Royal States Railway. Large vessels which require to lighten can lay perfectly safe from all winds in 30 ft. of water close to Dreiens Point. There are no tides.

The harbour is 2,000 ft. long, 200 to 350 ft. wide, 120 ft. wide at the entrance, 19 ft. deep at the entrance, 14 to 19 ft. deep inside, and has 4,200 ft. of quays. There is a crane to lift 6 tons.

Pilotage.—Not compulsory. Rates according to the gross tonnage and draught of a vessel.

Port Charges.—Harbour Dues:—10 öre per reg. ton inwards, and the same outwards. **Ballast Dues:**—2 öre per reg. ton. **Towage:**—Loaded, 25 öre per reg. ton; ballasted, as per agreement. **Ballast:**—100 öre per ton alongside.

Discharging.—From Sortehavet—oilcakes, 1s. per ton; maize, 7d. per ton. From Huserika—maize, 7d. per ton; cottonseed cakes in sacks, 60 öre per 1,000 kilos. Coal from England, 8d. per ton shipped. Coke from England 10d. per ton shipped. **Crane Hire** (6 tons):—6 kr. for the first day, and 4 kr. for the following days. **Fresh Water:**—3 öre per reg. ton for the first 200 tons, and 2 öre for every additional reg. ton. **Provisions:**—Plentiful and cheap.

Pro Forma Charges on a steamer of 1,241 gross tons (763 net tons):—

	Kr.	öre.
Clearing inward from Bo'ness—		
Harbour dues	76	30
Water	17	28
Clearing outward to Methil—		
Harbour dues	76	30
Towing in and out	10	00
Labour, 1,502½ tons at 8d.	901	50
Pilotage from Löwerodde	49	00
Pilotage to Löwerodde	39	00
Disbursements to harbour master	5	00
Postage and telegrams	26	64
Brokerage for clearing	110	00
	1,311	02 = £72 16s. 8d.

Pro Forma Charges on a steamer of 2,641 gross tons (1,695 net tons):—

	Kr.	öre.
Clearing inward from Novorossisk via Nyborg—		
Harbour dues	169	50
For steamer	54	00
Clearing outward to Esbjerg—		
Harbour dues	169	50
Towing in and out	18	00
Stevedores' labour, 1s. per ton, oilcake	932	86
Pilotage from Fredericia	97	50
Pilotage from Löwerodde	68	00
Pilotage to Fredericia	97	50
Allowance for Custom House supervision	49	23
Disbursements to harbour master	10	00
Brokerage for clearance, direction of freight, money trans- actions with bank and remittance, 11 öre per ton	186	45
	1,852	54 = £102 18s. 4d.

KORSÖR.

Korsör is in lat. 55°19' N., long. 11°9' E.

Population.—7,064.

Imports.—Coal, timber, deals, battens, boards, fodder, etc.

Exports.—Grain, flour, fruit, butter, bricks, cattle, fish, etc.

Accommodation.—The outer road is partly open, but, as the bottom is clay, it is safe for all vessels that can depend on their anchor and chain. Pilots are necessary, and will board vessels in all weathers. The harbour is good, safe, and commodious, with a depth of 22 ft. at the entrance, and a width at the entrance of 290 ft. between the breakwaters. The harbour is 1,850 ft. long, and from 410 to 530 ft. wide, with 4,950 ft. of quayage. A depth of 22 ft. is found close to the quay wall along the north side of the harbour, but it only extends for 15 to 30 ft. from the wall. The railway runs on the quay, and there is a fixed crane to lift 4 tons and a travelling crane to lift 6 tons. There is a slipway to take vessels of 150 tons, not drawing more than 6 ft., in very fair condition.

The current in the vicinity running strongly, and powerful ice-breakers being used, the harbour is never blocked by ice. There is one of the Svitzer Salvage Company's boats always stationed here, ready, on the shortest notice, to proceed to vessels requiring assistance.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time, and 0 h. 44 m. 32 s. local mean time.

Pilotage is reckoned according to draught and burden. The charge for a ship of 600 net reg. tons is about £3 in and out, boat hire included.

Port Charges.—Towage:—Tugboats are always to be had (signal outside is two flags on mainmast), 10 öre per ton up to 200 tons; above, 5 öre per ton. **Harbour Dues:**—12 öre per ton in, and the same out. **Stevedores:**—Discharging coal, 6d. per ton; 20s. for each vessel for labourers' insurance. Half expenses charged on vessels calling for coal or for provisions, which can always be obtained at moderate rates.

Pro Forma Charges on a steamer of 600 tons register, with a cargo of coal from England, and ballast out:—

	Kr	öre.
Port dues, inwards	72	00
Port dues, outwards	72	00
Pilotage inwards and outwards and boat hire	54	00
Brokerage for clearing the ship in and out	99	00
Brokerage for cashing freight, $\frac{1}{2}$ per cent. on 6,480 kr.	32	40
Discharging 1,200 tons at 6d. and 20s. insurance	558	00

887 40 = £49 6s. 0d.

LEMVIG.

Lemvig is in lat. 56°33' N., long. 8°17' E.

Population.—About 3,500.

Imports.—Timber and coal.

Exports.—Agricultural products.

Accommodation.—New Harbour: Length of quayage, 390 ft.

Denmark—Lemvig (*continued*).

Depth of water, for a length of 190 ft., 13 ft.; for a length of 200 ft., 11 ft. Length of breakwater, 600 ft. Old Harbour: Length of quayage, 250 ft. Depth of water at the entrance and quayside, high water, 9 ft.; low water, 7 ft. Safe anchorage. No bar. There are no cranes, etc. There is a canal between Limfiord and the North Sea about 2 miles long. It is available for vessels 100 ft. long, drawing 9 ft. and of any width of beam.

Pilotage.—Not compulsory.

Port Charges.—**Wharfage Dues:**—11 öre in, and the same out; beside 2 öre per ton net reg. **Towage:**—3 kr. per mile. **Boat Hire:**—As per agreement. **Ballast:**—1 kr. 50 öre per ton. **Labour:**—40 öre per hour for sailing vessels, and 50 öre per hour for steamers. **Brokerage:**—As per agreement.

LOHALS.

Lohals is a small port on the N.W. point of Langeland, with 10 ft. of water. Harbour dues are the same as at Rudkiobing.

LÖKKEN.

Lökken is in lat. 57°23' N., long. 9°42' E.

Vessels lie outside, secured by cables. The only charges are the government dues, which amount to about 2*d.* per reg. ton. All the trade is done in Danish bottoms.

MARIAGER.

Mariager, in lat. 56°39' N., long. 9°59' E., is on the Mariager Fiord.

Population.—1,000.

See **Hobro**.

MARSTAL.

Marstal, in lat. 54°52' N., long. 10°30' E., is on the island of Æro, 4 $\frac{1}{4}$ miles from Æroeskiobing.

Population.—3,500.

Accommodation.—There is 10 ft. of water in the harbour.

Port Charges.—**Harbour Dues:**—10 öre per reg. ton in, and the same out. **Ballast:**—1 kr. per ton.

MIDDELFART.

Middelfart, in lat. 55°30' N., long. 9°48' E., is situated on the N.W. coast of the island of Fyen.

Population.—About 5,000.

Imports.—Coal, timber, etc.

Export.—Grain.

Accommodation.—There is 24 ft. of water in the new harbour. The old harbour is 610 ft. long and 15 ft. deep, the entrance is 46 ft. wide and easy to enter. There is 360 ft. of quayage with a depth of 24 ft. alongside, and 615 ft. with a depth of 5 ft. alongside. The railway runs on the quay. In the roadstead close to the town there is from 4 to 10 fathoms of water with anchorage on clay. There is a private coal wharf with new installations for quick discharge.

Denmark—Middelfart (*continued*).

Pilotage.—Pilots can be obtained at Middelfart. Summer—for vessels of 500 tons, drawing 14 ft., 14 kr. 50 öre; 500 tons, drawing 12 ft., 12 kr. 50 öre; 1,000 tons, drawing 14 ft., 19 kr.; 1,000 tons, drawing 12 ft., 17 kr. Winter—vessels of 500 tons, drawing 14 ft. 19 kr.; 500 tons, drawing 11 ft., 15 kr. 50 öre; 1,000 tons, drawing 14 ft., 25 kr.; 1,000 tons, drawing 11 ft., 23 kr.

Port Charges.—**Harbour Dues** :—10 öre per ton inwards with cargo, and the same outwards in ballast. **Brokerage** :—16½ öre per ton inwards, and the same outwards. **Ballast** :—1 kr. per ton.

MULLERUP.

Mullerup, in lat. 55°29' N., long. 11°11' E., is 9 miles N. of Korsör, on the W. coast of Sicelland.

Imports.—Coal, oilcake, timber, etc.

Export.—Barley.

Accommodation.—The port is available for vessels of 10 ft. draught. Vessels above that draught anchor in 4 or 5 fathoms in the roadstead, which is safe.

Pilotage.—Summer, 60 öre; winter, 80 öre per ft., in and out.

Port Charges.—**Port Dues** :—25 öre per reg. ton. **Light Dues** :—1 kr. per ton. **Ballast** :—75 öre per ton. No charge for discharging ballast.

NAKSKOV.

Nakskov, in lat. 54°49' N. long., 11°9' E., is situated on the W. coast of the island of Laaland, at the head of the fiord of Nakskov.

Population.—About 9,000.

Imports.—Manufactured goods, coal, iron, coke, timber, wine, colonial produce, salt, manure, feeding stuffs, etc.

Exports.—Grain (especially wheat and barley), flour, butter, eggs, cheese, wool, hides, cattle, sheep, pigs.

Accommodation.—There is 16 ft. of water in the fairway leading up to the harbour. The harbour is 2,600 ft. long, safe, and protected from all winds; depth inside, 16 ft. There is 4,000 ft. of quayage, at which vessels drawing from 6 to 16 ft. can load and discharge. There is a crane to lift 5 tons. Steam communication with Copenhagen, Svendborg, Lubeck, Aarhus, and Newcastle.

Pilotage.—Rates are according to the draught and tonnage of the vessel. For a vessel of 1,000 reg. tons, drawing 14 ft., winter, 46 kr.; summer, 34 kr. For a vessel of 2,000 reg. tons, drawing 15 ft., winter, 63 kr.; summer, 47 kr.

Port Charges.—**Harbour Dues** :—8 öre per reg. ton in, and the same out; in ballast, 4 öre per reg. ton. **Ballast** :—75 to 100 öre per ton. **Towage** :—33 öre per reg. ton. **Water** :—20 öre per hectolitre. **Beaconage** :—To be paid when a pilot is not taken, 5 öre per reg. ton.

NIVAA BAY.

Nivaa Bay is in lat. 55°55' N.; long. 12°33' E.

Denmark—Nivaa Bay (*continued*).

Accommodation.—There is $3\frac{1}{4}$ to 4 fathoms of water in the bay. There are three piers with 10 to 11 ft. of water alongside, where vessels can load or discharge. Vessels generally bring coal here for the large brick-yards. There are no pier or pilotage dues. **Ballast**:—1s. per ton.

NYBORG.

Nyborg, in lat. $55^{\circ}19'$ N., long. $10^{\circ}46'$ E., is situated at the head of a fiord about 3 miles long, branching off the Great Belt.

Population.—7,922.

Imports.—Coal, coke, maize, grain, oilcake, and timber.

Exports.—Grain, butter, and provisions.

Accommodation.—Nyborg has a good roadstead, well sheltered from all winds, and capable of receiving the largest vessels. Vessels can be repaired. The depth of water in the roads is 40 ft. The harbours are all connected with the railway and are three in number; the west harbour has an area of 9,120 sq. yards and a depth of $14\frac{1}{2}$ ft.; the east harbour has an area of 12,720 sq. yards and a depth of $18\frac{1}{2}$ ft.; the two together have 2,600 ft. of quayage. The new harbour has an entrance 130 ft. wide and $24\frac{1}{2}$ ft. deep; the quays are 720 ft. long with a depth of $24\frac{1}{2}$ ft., 550 ft. long with a depth of 10 to 20 ft., and 800 ft. long with a depth of 8 ft. There is a patent slip to lift 250 tons. Fires and lights are allowed on board. Provisions and good water can be obtained. There is daily rail and steam-boat communication with Copenhagen and Hamburg. Steamers can coal here quickly, and at moderate price.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 43 m. 10.7s. local mean time.

Pilotage.—According to the draught and gross tonnage of a vessel. For instance, for a steamer of 3,000 gross tons, drawing 22 ft., about £5 in and out.

Port Charges.—**Harbour Dues**:—12 öre per net reg. ton in, and the same out. **Ballast**:—1 kr. per ton. **Ballast Dues**:—2 öre per reg. ton. **Brokerage**:— $16\frac{1}{2}$ öre per reg. ton. **Stevedore**:—Coal, 8d. to 10d. per ton; grain, 6d. to 9d. per ton; oilcake, 8d. to 1s. 2d. per ton.

NYKIÖBING.

Nykiöbing is in lat. $54^{\circ}47'$ N., long. $11^{\circ}52'$ E.

Population.—9,000.

Imports.—Food-stuffs, coal, and timber.

Exports.—Grain and sugar.

Accommodation.—The harbour is safe and easy of access. The channel from Guldborg to the harbour has been deepened to 20 ft. The harbour, at its entrance, is 16 ft. deep, and 85 ft. wide. There is 1,200 t. of quayage with from 12 to 14 ft. alongside. Rails run along the quays. On the outer side of the harbour is a quay 630 ft. long, with 20 ft. of water alongside; and south of Christian IX. Bridge is another quay, 580 ft. long, with 17 ft. of water. The width of the opening of the bridge is 42 ft.

Denmark—Nykiöbing (*continued*).

Time Signals.—A time signal is given daily at the telegraph office, at 1 h. 0 m. 0 s. Mid-European time, equal to noon Greenwich mean time and 0 h. 47 m. 32 s. local mean time.

Port Charges.—**Harbour Dues** :—10 öre per reg. ton in, and the same out. **Towage** :—25 öre per reg. ton loaded ; 20 öre per reg. ton in ballast (minimum 20 kr.). **Mooring** :—From 10 to 18 kr. **Ballast** :—1 kr. per ton. **Labour** :—Loading, oilcake, 1 kr. 20 öre per ton ; maize, 55 öre per ton. **Brokerage** :—16½ öre per net reg. ton.

Pro Forma Charges on a steamer of 738 tons register, with a cargo of coal in, and ballast out, drawing 15½ ft. in, and 11 ft. 2 in. out :—

	Kr.	öre.	
Harbour dues in and out	147	60	
Brokerage	121	77	
Pilotage in and out	228	70	
Boat hire	18	00	
Custom House, water, harbour master, etc.	60	00	
	576	07	= £32 0s. 1d.
		50	0 0
			£82 0s. 1d.

Discharging, 8d. per ton (say 1500 tons)

NYSTED.

Nysted is in lat. 54°38' N., long. 11°43' E.

Population.—1,500.

Accommodation.—There is 12 ft. of water in the channel and in the harbour.

Port Charges.—**Harbour Dues** :—12 öre per reg. ton in, and the same out ; in ballast, 2 öre per reg. ton. **Ballast** :—1 kr. per ton.

ODENSE.

Odense, in lat. 55°23' N., long. 10°23' E., is situated on the N. coast of the island of Fyen.

Population.—About 40,547.

Imports.—Coal, maize, oilcake, cotton-seed cake, grain, seed, bran pig-iron, timber, etc.

Exports.—Butter, eggs, sugar, meal, etc.

Accommodation.—A lighthouse is situated at the entrance of Odense Fiord (called Odense Gab), where vessels are boarded by the Custom House officer, and pilots can be obtained. A good canal leads up to Odense, and the waterway has lately been improved. There is 19 ft. of water up to the quay. Steamers of about 3,000 tons d.w. go alongside the quay at Odense with full cargo, and of about 6,000 tons d.w. with part cargo. The new harbour has 2,200 ft. of quayage with a depth alongside of from 16 to 20 ft. The old harbour has 2,000 ft. of quayage with a depth alongside of from 12 to 13 ft. Tugboats, if required, can be had at moderate charges. A powerful icebreaker keeps the waterway up to Odense open, without any expense to vessels. A pilot is indispensable to strangers. There are good and modern facilities for discharging, big warehouses and storeplaces. Rails run alongside the quays. There is a crane capable of lifting 10 tons. Shipbuilding is carried on. Small repairs to steamers can be done. Provisions are cheap.

Denmark—Odense (continued).

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 41 m. 32 s. local mean time.

Pilotage.—Compulsory in the canal—not in the fiord. (The fiord is from Odense Gab to the entrance of the canal.)

Port Charges.—**Harbour Dues:**—13 öre per net reg. ton in, and the same out. **Discharging:**—Coal, 7*d.*; pig-iron, 7*d.*; oilcake, loose, 90 öre; cotton-seed cake in bags, 60 öre; maize, 55 öre; bran in bulk, 90 öre; bran in bags, 60 öre. **Ballast Dues:**—4 öre per net. reg. ton. **Ballast:**—80 öre per ton. **Water:**—2 to 10 kr. per vessel. **Towage** inwards is not necessary when the wind is N.N.E. and E.S.E., and outwards not necessary when S.S.W. and N.W.

Pro Forma Charges on a steamer of 1,000 net reg. tons, with full cargo in, and ballast out:—

	Kr.	öre.
Harbour dues in, 13 öre per net reg. ton	130	00
Harbour dues out, 13 öre per net reg. ton	130	00
Pilotage in	75	00
Pilotage out.	65	00
	400	00 = £22 4 <i>s.</i> 6 <i>d.</i>

Pro Forma Charges on a sailing vessel of 500 net reg. tons, with a full cargo in, and ballast out:—

	Kr.	öre.
Harbour dues in, 13 öre per net reg. ton	65	00
Harbour dues out, 13 öre per net reg. ton	65	00
Pilotage in the fiord, in and out	60	00
Pilotage in the canal, in and out	17	00
	207	00 = £11 10 <i>s.</i> 0 <i>d.</i>

RANDERS.

Randers, in lat. 56°28' N., long. 10°2' E., is on the river Gudenaa, on the E. coast of Jutland.

Population.—20,963.

Imports.—Coal, salt, timber, feeding stuffs (grain, oilcake, and bran), colonial goods, manufactured iron, dry goods, slates.

Exports.—Butter, bacon, eggs, cattle, horses, wool.

Accommodation.—The anchorage is good and safe in 4 to 6 fathoms, but the entrance at Udbyhøj, on the south side of which there is a lighthouse, is difficult, and should not be attempted without a pilot. The river is 16 miles long and there is 18 to 19 ft. of water. There is 18 ft. of water on the bar and up the fiord and at the mouth of the Gudenaa; from there, about 6 English miles, there is 18 ft. of water to the quay at Randers. The water area of the harbour is 9½ acres and there is 3,000 ft. of quays. Steam coal is always to be had, delivered alongside the ship on the quay. The harbour possesses a powerful tug, which is also used as an ice-breaker. There are no cranes, but there is a warehouse with a grain elevator.

Pilotage.—The signal for a pilot is a flag on the fore-top, and for a tugboat, a flag in the shrouds. Rates are according to the draught and gross tonnage of the vessel. Not compulsory.

Denmark—Randers (continued).

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 40 m. 16 s. local mean time.

Port Charges.—Towage Dues :—From sea to Randers, with cargo, 40 öre per gross reg. ton ; in ballast or without cargo, 20 öre per gross reg. ton ; from Randers to sea, with cargo, 40 öre per gross reg. ton ; in ballast or without cargo, 15 öre per gross reg. ton. Between Randers and Ladestedet, 15 öre ; Randers and Uggelhuse, 20 öre ; Randers and Mellerup, 25 öre ; Randers and Skahustrup Bay, 30 öre ; Randers and Udbyhoj, 35 öre ; Randers and Rehdeu, 40 öre ; Ladestedet and Uggelhuse, 15 öre ; Ladestedet and Mellerup, 20 öre ; Ladestedet and Skahustrup Bay, 25 öre ; Ladestedet and Udbyhoj, 30 öre ; Ladestedet and Rehdeu, 35 öre ; Uggelhuse and Mellerup, 15 öre ; Uggelhuse and Skahustrup Bay, 20 öre ; Uggelhuse and Udbyhoj, 25 öre ; Uggelhuse and Rehdeu, 30 öre ; Mellerup and Skahustrup Bay, 15 öre ; Mellerup and Udbyhoj, 20 öre ; Mellerup and Rehdeu, 25 öre ; Skahustrup and Udbyhoj, 15 öre ; Skahustrup and Rehdeu, 20 öre ; Udbyhoj and Rehdeu, 10 öre per gross ton. **Harbour Dues :—**12 öre per reg. ton in, and the same out. **Ballast Dues :—**3 öre per net. reg. ton. **Clearance :—**16½ öre per net reg. ton. **Stevedore :—**Discharging, coals, 7d. per ton ; grain, 5½d. per ton ; grain in bags, 4d. per ton. Discharging time has to be arranged only with the consignees.

Pro Forma Charges on a steamer of 247 net tons, from Porsgrund :—

	Kr. öre.
Inward—	
Harbour dues	29 64
Clearance	30 88
Pilotage, draught 15 feet	68 00
Home passage	5 00
Outward—	
Harbour dues	37 05
Clearance	9 88
Harbour master	2 00
Stamps	2 00
Ballast, 1 kr. per ton	56 00
Towage, inward	111 60
Towage, outward	41 85
Telegrams	2 60

396 50 = £22 0s. 7d.

Pro Forma Charges on a steamer of 615 net tons, from Bo'ness :—

	Kr. öre.
Inward—	
Harbour dues	73 80
Custom House officer	4 33
Clearance	76 88
Pilotage, draught 14 ft. 6 in.	102 00
Home passage	5 00
Outward—	
Harbour dues	73 80
Clearance	24 60
Pilotage, draught 10 ft. 6 in.	91 00
Home passage	5 00
Consulate	2 28
Harbour master	2 00
Customs for overtime	21 28
Stamps	6 00
Customs for night watch	16 00
Discharging, 7d. per ton of coal, and 9d. per ton of coke ; cargo, 554 tons coal and 554 tons coke	664 80
Telegrams	11 60

1,180 37 = £65 11s. 6d.

Denmark.

RÖDVIK.

Rödvig is in lat. 55°16' N., long. 12°22' E.

Accommodation.—There is 11 to 14 ft. of water in the channel, and 11 ft. in the harbour.

Port Charges.—**Harbour Dues** :—25 öre per reg. ton, in and out, loaded ; in ballast, 2 öre per reg. ton.

ROESKILDE.

Roeskilde, in lat. 55°39' N., long. 12°8' E., is situated at the head of the fiord of the same name, which branches off the Ise Fiord, in the island of Siølland.

Population.—About 8,500.

Imports.—Coal, etc.

Exports.—Oats and barley.

Accommodation.—There is a depth of 10 ft. in the harbour, and the fiord has been deepened to 10 ft. No vessel drawing more than 10 ft. should come here. The entrance is difficult without the aid of the local pilot.

The town is about 20 miles from the entrance to the fiord, and is connected with Copenhagen by rail.

Pilotage.—Pilots are always in attendance, but tugboats are not to be had at all times.

Port Charges.—**Harbour Dues** :—7 öre per reg. ton in, and the same out ; in ballast, 2 öre per reg. ton. **Ballast** :—1 kr. per ton.

Pro Forma Charges on a British steamer of 116 tons register :—

	Kr.	öre.
Port dues, coming in	13	92
„ „ going out	13	92
Pilotage from the sea to Rörvig	9	00
„ „ Rörvig to Fredrikssund	22	50
„ „ Fredrikssund to Roeskilde	20	50
„ „ Roeskilde to Fredrikssund	19	00
„ „ Fredrikssund to Rörvig	21	00
„ „ Rörvig to sea	8	00
Clearance, 10 öre per ton reg.	11	60

139 44 = £7 15s. 0d.

RUDKIÖBING.

Rudkiöbing, in lat. 54°57' N., long. 10°45' E., is on the W. coast of the island of Langeland.

Population.—3,500.

Exports.—Grain, flour, butter, bricks.

Accommodation.—There is 12½ ft. of water in the harbour. Pilots can always be obtained on hoisting the usual signal. Fires and lights are allowed on board in the harbour. Repairs can be promptly effected. There is a patent slip to take vessels of 200 tons.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 42 m. 48 s. local mean time.

Denmark—Rudkiöbing (*continued*).

Pilotage.—According to the draught and gross tonnage of the vessel : April to September—up to 100 tons gross and drawing 8 ft., 5 kr. 90 öre, rising for each $1\frac{1}{2}$ ft. draught and 100 tons gross, 70 öre. From October to March—up to 100 tons, and drawing 8 ft., 7 kr. 80 öre, rising for every $1\frac{1}{2}$ ft. draught and 100 tons gross, 1 kr. From April to September—over 150 tons and drawing 8 ft., 8 kr. 30 öre, rising 90 öre for each $1\frac{1}{2}$ ft. October to March—11 kr., rising 1 kr. for every $1\frac{1}{2}$ ft.

Port Charges.—Harbour Dues :—12 öre per reg. ton for sailers ; 18 öre per reg. ton, for steamers, both for entering and going out. **Steam Tug :**—Up to 90 tons, 15 kr. ; from 90 to 150 tons, 20 kr. ; from 150 to 250 tons, 25 kr. **Ballast Dues :**—2 öre per reg. ton. **Sand Ballast :**—1 kr. per ton. **Labourage :**—3 to $3\frac{1}{2}$ kr. per day.

SAXKIÖBING.

Saxkiöbing, in lat. $54^{\circ}47'$ N., long. $11^{\circ}38'$ E., stands at the head of a long and narrow fiord on the island of Laaland.

Population.—1,550.

Imports.—Coal, slags, and oil-cake.

Exports.—Barley and wheat.

Accommodation.—The channel to the town has only 8 ft. of water. There is a steam tug here. Provisions are cheap, and fresh water can be obtained.

Pilotage.—Not compulsory. From sea to Oureby road : per foot, winter—1 kr. 87 öre ; summer—1 kr. 40 öre. From roads to Oureby : winter—44 öre ; summer—34 öre. From Oureby to Saxkiöbing : winter—44 öre ; summer—34 öre. Pilot's travelling expenses, 3 kr. 50 öre.

Port Charges.—Harbour Dues :—Danish vessels, 10 öre per reg. ton in, and the same out ; in ballast, 5 öre per reg. ton ; foreign vessels, 12 öre per reg. ton in, and the same out.

Oureby is about 2 miles from Saxkiöbing, on the other side of the fiord.

Accommodation.—There is 11 ft. of water here. Vessels drawing $9\frac{1}{2}$ ft. can load and discharge alongside a pier.

SKIELSKÖR.

Skielskör, in lat. $55^{\circ}15'$ N., long. $11^{\circ}18'$ E., stands on the fiord of the same name.

Population.—2,600.

Accommodation.—The entrance to the harbour is 70 ft. broad. The channel leading to it from the sea has about $13\frac{3}{4}$ ft. of water, and is three miles long and about 60 ft. broad. There are no tides. The outer harbour is 14 ft. deep, with 700 ft. of quayage. The inner harbour is 12 ft. deep, with 640 ft. of quayage. There is one crane to lift 4 tons. There is 24 ft. of water in the roadstead.

Pilotage.—In summer, 2 kr. per ft. ; in winter, $2\frac{1}{2}$ kr. per ft.

Port Charges.—Harbour Dues :—15 öre per reg. ton in, and the same out. **Ballast Dues :**—3 öre per reg. ton. **Towage :**—16 öre per reg. ton.

Denmark.

SKIVE.

Skive is in lat. $56^{\circ}35'$ N., long. $9^{\circ}0'$ E.

Population.—5,500.

Accommodation.—There is a depth at high water of 15 ft., and at low water of 11 ft.

Port Charges.—**Harbour Dues** :—11 öre per net reg. ton. **Brokerage** :—16 öre per net reg. ton. **Ballast** :—1 kr. per ton. **Labour** :—4 kr. 50 öre per day.

Pro Forma Charges on a steamer of 500 tons register, cargo of coal in, and ballast out, drawing 13 ft. loaded :—

	Kr. öre.
Harbour dues at 11 öre per net reg. ton.	55 00
Brokerage at 16 öre per net reg. ton	80 00
Pilotage, in and out	10 00
	<hr/>
	145 00 = £8 1s. 1d.

STEGE.

Stege, in lat. $55^{\circ}0'$ N., long. $12^{\circ}19'$ E., is situated on the island of Möen.

Population.—2,400.

Imports.—Coal, bran, oilcake, wood, saltpetre, superphosphates, etc.

Exports.—Grain, sugar, butter, flint pebbles, etc.

Accommodation.—There is a depth of water of 12 ft. There are no tides. There is a post steamer to Kallehave several times daily, at which place there is railway connection with Copenhagen.

Pilotage.—Not compulsory. For a vessel of 530 net reg. tons, in and out, 150 kr. in summer, 33 per cent. more in winter.

Port Charges.—**Entrance Fees** :—10 öre per net reg. ton in, and the same out. **Clearance Fees** :— $16\frac{1}{2}$ öre per net reg. ton. **Towage** :—From Kallehave to Stege: summer—20 öre per net reg. ton, minimum 15 kr.; winter—30 öre per net reg. ton, minimum 30 kr. **Boat Hire** :—From 2 to 5 kr. **Brokerage** :—3 to 5 per cent. **Labour** :—Coal, 8d. per ton; bran, 1 kr. per ton.

STRUER.

Struer, in lat. $56^{\circ}29'$ N., long. $8^{\circ}37'$ E., is the shipping port of Holstebro.

Population.—4,000.

Imports.—Coal, wood, oilcake.

Exports.—Cattle, eggs, butter.

Accommodation.—There is a good harbour with a depth at high water of 14 ft., low water 12 ft., and at lowest spring tide 10 ft.

Port Charges.—**Wharfage Dues** :—10 öre per reg. ton. **Entrance Fees** :—10 öre per reg. ton. **Clearance Fees** :—10 öre per reg. ton. **Ballast** :—1 kr. per ton. **Labour** :—7d. per ton. **Wharfage of Ballast** :—2 öre per ton.

Pro Forma Charges on a steamer of 509 tons register, cargo of coal in, and ballast out, drawing 13 ft. loaded :—

Denmark—Struer (*continued*).

	Kr.	öre.
Harbour dues at 20 öre per reg. ton	101	80
Brokerage and clearance	50	90
Pilotage in and out from Aalborg to Struer	30	54
Custom inspection, from Aalborg to Struer	11	04
Labour, at 7d. per ton	387	14

581 42 = £32 6s. 0d.

STUBBEKIÖBING.

Stubbekiöbing, in lat. 54°53' N., long. 12° 3' E., is on the island of Falster, and lies on the south side of the Grön Sound.

Population.—1800.

Exports.—Barley, corn, etc.

Accommodation.—The harbour has a depth of 17 ft. of water, and vessels of 15 ft. draught can lie afloat safely alongside a stone pier.

Pilotage.—From 3 to 10 kr., according to the draught of the vessel.

Port Charges.—**Harbour Dues:**—10 öre per reg. ton in, and the same out; in ballast, 2 öre per reg. ton. **Towage:**—10 öre per reg. ton. **Ballast:**—1 kr. to 1 kr. 25 öre per ton.

SVENDBORG.

Svendborg, in lat. 55°5' N., long. 10°36' E., is on the south side of the island of Fyen.

Population.—12,500.

Imports.—Coal, salt, timber, iron, colonial produce, petroleum, maize, oilcake, bran, etc.

Accommodation.—Vessels bound for this port get their pilots at Troense and Strandhuse. Vessels drawing 23 ft. can come alongside the quays, which are 4,100 ft. long; the railway runs along the quays, so that vessels can load or discharge direct into the wagons. There are cranes on the quays and there is a quay for tank steamers. There are two slips, the largest takes vessels up to 300 tons register, careening up to 500 tons register. Small repairs to machinery can be made. There is a floating dock in the harbour capable of taking vessels up to 400 gross tons. Ship-building is carried on. Lights and fires are allowed on board vessels in the harbour.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time and 0 h. 42 m. 24 s. local mean time.

Pilotage.—According to the tonnage and draught of the vessel.

Port Charges.—**Harbour Dues:**—12 öre per net reg. ton inwards, and the same outwards. **Ballast Dues:**—2 öre per reg. ton. Ballast (sand), 90 öre per ton. **Towage:**—From Green Point 15 öre per reg. ton; outside Green Point 20 to 25 öre per reg. ton. **Fresh Water:**—5 kr. for filling the tank. **Shipbroker:**—Clearance in, 12½ öre, and out, 4 öre per reg. ton. Provisions can be obtained at moderate prices.

Denmark—Svendsborg (continued).

Pro Forma Charges on a steamer of 1,181 reg. tons, from foreign port :—

	Kr.	öre.
Harbour dues in, 12 öre per net reg. ton	141	72
Pilot from (Nyborg) Knudshead	106	75
Pilot from Thum Riff	43	25
Show of hatches, 10 to 15 kr., say.	12	50
Clearance in, 12½ öre per ton net	147	62
Harbour dues out, 12 ore per reg. ton	141	72
Consulate fees	2	27
Ballast, 90 öre per ton d.w. say 400 tons	360	00
Water, 5 kr. for filling tank	5	00
Custom House officers for overtime	27	31
Pilot out to Knudshead	156	00
Ballast money to the harbour, 2 öre per. ton	8	00
Clearance, 4 öre per ton	47	24
	1199	38 = £66 12s. 7d.

THISTED.

Thisted, in lat. 56°58' N., long. 8°40' E., is situated on the Liim Fiord, 12 miles N.W. of Nykiöbing.

Population.—6,520.

Imports.—Coal, timber, oilcake, bran, wine, iron, salt, grain, maize.

Exports.—Oats, wool, hides, rags, butter, cattle, pigs, sheep, eggs, potatoes.

Accommodation.—Thisted can be reached by vessels of 10 ft. draught entering the Thyboron Channel, and 13½ ft. from Hals. The inner harbour is 280 ft. long, 200 ft. wide, 40 ft. wide at the entrance, 9 to 13 ft. deep. There is 700 ft. of quayage and a crane to lift about a ton. The outer harbour is 200 ft. long, 200 ft. wide, 200 ft. wide at the entrance, 13 ft. deep, and with 300 ft. of quayage.

Port Charges.—**Harbour Dues** :—10 öre per reg. ton inwards, and the same outwards. **Brokerage** :—10 öre per reg. ton. **Ballast Dues** :—2 öre per reg. ton. **Ballast** :—100 öre per ton. **Towage** :—From the sea by Thyboron Channel, with cargo, 36 öre per reg. ton ; in ballast, 27 öre. **Chartering** :—2½ to 5 per cent. ; noting protest etc., 1 kr. 53 öre. **Labourage** :—4 kr. per day, or 8d. per ton of cargo of coals. **Water** :—Free.

VEILE.

Veile, in lat. 55°42' N., long. 9°31' E., is situated at the head of Veile Fiord.

Population.—About 16,212.

Imports.—Coal, grain, bran, wood, oilcake, and pig-iron.

Exports.—Butter, eggs, and cattle.

Accommodation.—A channel of 1½ miles in length leads to the harbour, where the depth is 18 ft. Steamers drawing 18 ft. can enter at daily high water. Vessels of a larger draught will find a well-sheltered anchorage in 3½ to 4 fathoms, about 2½ miles from the town. The difference between high and low water is generally 2 feet, but a heavy westerly wind can increase the difference to 4 ft. or more. The length of quayage in the harbour is 2,060 ft. The harbour is 2,636 ft. long and 123 ft. wide at the entrance. The basin is 1,236 ft. long and 227 ft. wide. There is a crane on the quay able to lift 6 tons. Provisions of all kinds can be had at ordi-

Denmark—Veile (continued).

nary prices. Fresh water is supplied by pipes carried alongside the quay. The railway is on the south side of the basin. There is a patent slip to lift 300 tons.

Time Signals.—Chronometers can be checked by attending the telegraph office at 1 p.m. Mid-European time, corresponding to noon Greenwich mean time, and 0 h. 38 m. 12 s. local mean time.

Pilotage.—Not compulsory. When employed the rate varies according to the draught and tonnage of the vessels. For instance, a vessel of 500 reg. tons, drawing $16\frac{1}{2}$ to 18 ft., from the road to the harbour, would pay in summer, 17 kr.; winter, 23 kr. A vessel of 1,000 reg. tons—summer, 23 kr.; winter, 30 kr.

Port Charges.—**Port Dues** :—10 öre per reg. ton in, and the same out. **Towage** :—From the buoy to the harbour, 17 öre per reg. ton; from the harbour to the buoy, 12 öre per reg. ton. Tugboats do not get up steam for less than 15 kr. **Ballast** :—Sand, 1 kr. per ton delivered on the quay. **Stevedore** :—Discharging coal, 7d. per ton. **Brokerage** :— $16\frac{1}{2}$ öre per net reg. ton in and out.

Pro Forma Charges on a steamer of 720 tons register, cargo of 1,200 tons of coal in, and ballast out, drawing 16 ft. loaded :—

	Kr.	öre.
Harbour dues at 10 öre per reg. ton in and 10 öre out	144	00
Brokerage	118	80
Pilotage, in and out, winter, 53 kr.; summer	39	00
Towage, out and swinging	45	00
Boat hire and mooring	12	00
Diet money to Customs officers (winter, 37 kr.); summer	16	00
Discharging at 7d. per ton = £35	630	00

1,004 80 = £55 16s. 6d.

VORDINGBORG.

Vordingborg, in lat. $55^{\circ}2'$ N., long. $11^{\circ}53'$ E., is on the S. coast of Sicelland.

Accommodation.—Vessels drawing 11 to 12 ft. can reach the loading place, and those of 6 ft. draught can load alongside the pier.

Port Charges.—**Harbour Dues** :—8 öre per reg. ton in, and the same out; in ballast, 4 öre per reg. ton. **Ballast** :—1 kr. per ton. **Towage** :—Up to 100 tons register, 17 kr. 50 öre, and 10 öre for every additional ton.

ICELAND.

Iceland, the chief of the dependencies of the Crown of Denmark, has its own constitution and administration. The responsible head of the administration is the Minister for Iceland, who is nominated by the King, and who has an official residence at Reykjavik. The legislative power is vested in the Althing. Iceland has a total area of 39,756 square miles, and a population of about 80,500. The trade of the Colony in 1906 was £1,519,902, made up of imports £880,398 and exports £639,504. During 1906 the tonnage of vessels trading with the Iceland ports was: Steamers (326) 109,692 tons, sail (75) 7,209 tons.

For trading purposes the island is divided into four districts: East, West, North, and South.

Denmark—Iceland (continued).

In the South District the authorized trading places are :—

- | | |
|---------------------|------------------|
| 1. Reykjavik. | 7. Akranes. |
| 2. Havnefjord. | 8. Brakarpollur. |
| 3. Keflavik. | 9. Thorlakshavn. |
| 4. Orebakke. | 10. Grindavik. |
| 5. Vestmann Island. | 11. Stokkseyri. |
| 6. Papos. | 12. Vik. |

In the North District :—

- | | |
|------------------|-----------------|
| 13. Akureyri. | 19. Thorshavn. |
| 14. Skagastrand. | 20. Saudarkrok. |
| 15. Hofsos. | 21. Blonduos. |
| 16. Siglufjord. | 22. Bordeyri. |
| 17. Husavik. | 23. Olafsfjord. |
| 18. Raufarhavn. | 24. Dalvik. |

In the East District :—

- | | |
|------------------|-------------------|
| 25. Vopnafjord. | 29. Berufjord. |
| 26. Seydisfjord. | 30. Faskrudsford. |
| 27. Reydarfjord. | 31. Nordfjord. |
| 28. Eskelfjord. | 32. Borgarfjord. |

In the West District :—

- | | |
|--------------------|----------------------|
| 33. Isafjord. | 42. Bordeyre. |
| 34. Stykkisholm. | 43. Onundarfjord. |
| 35. Olafsvik. | 44. Skeljavik. |
| 36. Budir. | 45. Adalvik. |
| 37. Bildal. | 46. Hofn. |
| 38. Dyrefjord. | 47. Alptafjord. |
| 39. Patriksfjord. | 48. Steingrimsfjord. |
| 40. Flatey Island. | 49. Nordurfjord. |
| 41. Reykjafjord. | 50. Bitrufjord. |

Making in all 50 trading places, of which Reykjavik, Isafjord, Seydisfjord, Havnefjord, and Akureyri are towns.

The law regulating the trade and navigation enacts that all foreign vessels visiting the island for purposes of trade shall first enter any one of the above-named 50 trading places, where they must report their ship, and if not provided with a clean bill of health, must submit to a medical examination ; after which, upon payment of the legal shipping dues, they are at liberty to transact their business at any of the above enumerated 50 places. In addition to these 50 authorized trading places, vessels may trade on any part of the coast. At Thorshavn there are no merchants at all, at other places from two to six ; but at Reykjavik there are now more than 50, the majority of whom are natives. There are, however, some Danish merchants, but these reside in Copenhagen, and have their business carried on by factors or agents. Vessels trading to Iceland should have bill of health and manifest certified by Danish Consul at port of loading.

The best winter harbour in the island is Havnefjord, and after that Reykjavik, Isafjord, Seydisfjord, and Akureyri. Skagastrand, Hofsos, Keflavik, Vopnafjord, and Orebakke are dangerous harbours, and ships are often driven ashore and totally wrecked there.

The harbours are never closed by ice on the south and west sides of the island ; but occasionally the Greenland drift ice blocks up the north and part of the east coast in the spring.

A lighthouse is to be erected on Vestmann Island.

All vessels from abroad pay a clearance fee of 25 öre (3½d.) per net register

Denmark—Iceland (*continued*).

ton at the first harbour entered. Vessels that pass Reykjavik lighthouse and enter a port in Faxa Bay pay light dues, 20 öre ($2\frac{2}{3}d.$) per net register ton, but if they pass Faxa Bay and enter a port north of Snæfellsnes they pay only 15 öre ($2d.$) per net register ton.

At Reykjavik harbour dues of 15 öre ($2d.$) per net register ton are charged on the first entry in the year, and on subsequent entries in the same year the harbour dues are reduced by 25 per cent. At Reykjavik pilotage is compulsory on the first entry each year, for which 8 öre ($1\frac{1}{5}d.$) per net register ton is charged. On subsequent entries in the same year pilotage is optional at the same rate. Each vessel pays also a pilotage fund fee of 1 kr. ($1s. 1\frac{1}{2}d.$), and between August 17 and April 17 a harbour light fee of 2 kr. ($2s. 2\frac{2}{3}d.$). For permission to take ballast from the beach of Reykjavik a fee of 10 öre ($1\frac{1}{3}d.$) per net register ton is charged, and for permission to take water a fee of 2 kr. per vessel.

At Isafjord the harbour dues are 15 öre ($2d.$) and at Akureyri 12 öre ($1\frac{2}{3}d.$) per net register ton.

Foreign fishing vessels entering harbours in Iceland pay the same dues as trading vessels, except that the clearance fee is 10 öre ($1\frac{1}{3}d.$) per net register ton at the first port entered and 5 öre ($\frac{2}{3}d.$) per ton at each port subsequently entered on the same voyage, and compulsory pilotage at Reykjavik is 5 öre ($\frac{2}{3}d.$) per net register ton.

All foreign vessels entering ports in Iceland must produce a bill of health, and a manifest, both attested by the Danish Consul at their port of departure. These visas are often omitted, which entails the imposition of a fine.

REYKJAVIK.

Reykjavik, in lat. $64^{\circ}8' N.$ long. $21^{\circ}57' W.$, is the capital of Iceland.

Population.—10,300.

Imports.—Timber, salt, coal, flour, bread, colonial produce, and manufactured goods.

Exports.—Cod-fish, cod and shark oil, mutton, horses, sheep, sheepskins, wool, tallow, feathers, eider-down, butter.

Accommodation.—The harbour of Reykjavik is safe enough for vessels provided with good anchors and chains. The anchorage is in 3 to 6 fathoms. Gales from the N.W. cause a heavy swell, and strong winds often render it impossible to load or discharge. The depth at the entrance of the port is 36 ft. at low water, and 42 ft. at high; inside there is 24 ft. at low, and 40 ft. at high. There are small piers for loading and discharging the lighters.

Pilotage.—Compulsory on the first entry each year; subsequent entries in the same year optional. 8 öre per net reg. ton. **Pilotage Fund Fee:** 1 kr. per vessel.

Port Charges.—Harbour Dues:—15 öre per net reg. ton on the first entry in each year. A reduction of 25 per cent. is made on subsequent entries in the same year. **Light Dues:**—20 öre per net reg. ton. **Harbour Light Fee:**—2 kr. (levied between August 17 and April 17). **Permission to take Ballast** from the beach, 10 öre per net reg. ton. **Permission to take Water:**—2 kr. per vessel. **Clearance Fee:**—25 öre per net reg. ton.

Denmark.

FARÖE ISLES.

THORSHAVN.

Thorshavn, in lat. $62^{\circ}0' N.$, long. $6^{\circ}47' W.$, on the south-east end of the island of Stromoe, is the principal port of the group.

Population.—About 1,800.

Imports.—Corn, pulse, bread, malt, spirits, colonial produce, iron lead, gunpowder, lime, bricks, timber, tar, glass, linen, cloth, shoes, books.

Exports.—Hosiery, fish, train oil, feathers, and skins.

Accommodation.—Although there is plenty of water, the harbour is not very commodious, especially with winds from E.N.E. and S.S.E., unless vessels are well moored. Vessels not exceeding 160 feet in length can get moorings to cables made fast to the land across the bays. Should the swell make Thorshavn Roads undesirable, vessels go to Kongshavn, where they can lie absolutely safe. The safest and best harbours are Vestmann's Haven, Klaksvig, Fuglefjord, Kongshavn, and Trangisvaag. The other harbours are not so good, except with certain winds. All vessels must enter and clear at one of the nine ports—Thorshavn, Vestmann's Haven, Klaksvig, Trangisvaag, Fuglefjord, Kongshavn, Midvaag, Sand, or Vaag. At Thorshavn the master of the vessel must apply to the Landfoged, at the other harbours to the Sysselmand. All vessels must also possess a clean bill of health and manifest certified by the Danish Consul at the port of loading. The coasting trade is open to all nations allowing Danish vessels the same privilege.

Pilotage.—There are no regular pilots, but fishermen can be had to act as such, and charge from 10 to 20 kr. for bringing vessels into port. They are found at Nolso Fiord.

Port Charges.—**Port Dues:**—5 öre per reg. ton, which entitles vessels to free pratique at all ports. Vessels loading or discharging cargo at Thors-havn or Vaag, pay, in addition, 5 öre per reg. ton as harbour dues. Ships' stores can be had at any of the ports.

TRANGISVAAG.

Trangisvaag is on the E. side of the island of Suderoe.

Imports.—Manufactured goods, colonial produce, spirits, salt, and coal.

Exports.—Fish, oil, wool and feathers.

Accommodation.—There is a safe and well-sheltered harbour, with a depth of water of from 10 to 30 fathoms. Vessels anchor in 7 fathoms on a clay bottom, about a cable length off shore.

Pilotage.—Not compulsory.

Port Charges.—**Harbour Dues:**— $1\frac{1}{2}d.$ per ton. Vessels neither loading nor discharging cargo, pay half the above rate. **Labour:**—4s. to 5s. per day.

GREENLAND.

By means of a Proclamation bearing date, Copenhagen, March 8, 1905, the Royal Greenland Company announced that in accordance with the provisions of treaties made between the Danish Government and the United States of America, Great Britain and other States, the whole of the Danish Colonies, with all coasts and islands belonging thereto on the west coast of Greenland extending from 60° to 74°30' N. lat. are closed to all navigation, foreign as well as Danish, unless special permission has been first obtained from the Danish Government. Vessels contravening this regulation are liable to seizure and forfeiture of ship and cargo. Similar punishment may be applied where any person is found trading with Greenlanders or Danish Colonists from any vessel lying in any port of Greenland or off the coast. Shipmasters compelled by shipwreck or other similar cause to seek refuge in any port of Greenland shall only remain in port so long as is absolutely necessary, and shall obey any order given by the local authorities. Should any of the crew remain on shore at places that are permanently or temporarily inhabited longer than is necessary, or carry on any trade with the natives, or if they hold any intercourse whatever with the native population, the shipmaster will be held responsible.

Watering without special leave shall only take place at the Colony of Holstensborg in South Greenland and at the Colony of Upernivik and the settlement of Godhavn in North Greenland, and is subject to the following conditions :—

1. That any shipmaster when proceeding on his voyage to Greenland shall be provided with a bill of health from the local authorities of the port of departure, the said bill of health to contain a statement not only as regards the general state of health at the port of departure, but also as regards the health of each separate person on board, proved by a medical examination of the whole crew (especially as regards venereal and other contagious diseases). The said bill of health must be visé by the Royal Danish Consul or Vice-Consul (if any) at the port of departure.

2. On arrival of the vessel at any of the aforesaid watering places, whichever is first, the said bill of health shall be delivered by the shipmaster to the Superintendent of the Colony, together with a bona fide declaration signed by the shipmaster to the effect that, since the day of departure of the vessel from the port where she received her bill of health, to the best of his knowledge no case of any contagious disease has occurred on board, nor any case of venereal disease has occurred among his crew. If the vessel carries a surgeon, a certificate from this officer in lieu of the said declaration may be delivered.

3. The Superintendent of the Colony receiving the said declaration or medical certificate shall give the shipmaster a certificate acknowledging the receipt which shall be produced as legitimation by the said shipmaster, before any other Greenland authority he may have to deal with on the same voyage.

4. If there be any contagious disease on board any vessel, the Greenland authorities shall take all necessary measures to prevent the disease from spreading among the native population, and may order the vessel to proceed to another watering place. Such instructions the master must at once obey.

FRANCE.

France lies on the western seaboard of Europe. It has a total area of 207,054 square miles, and a coast line of 1,760 miles, of which 1,304 miles are on the Atlantic and 456 on the Mediterranean. The legal population of the Republic at the census of March, 1906, was 39,252,267.

Commerce.—The trade of France is of the annual value of about four hundred and seventy million pounds sterling. The latest returns available are those for the twelve months ended December 31, 1907, which show as under :—

IMPORTS.

Food	£41,520,000
Raw material	160,520,000
Manufactured articles	46,880,000
Total for 12 months	<u>£248,920,000</u>

EXPORTS.

Food	£29,880,000
Raw material	60,320,000
Manufactured articles	133,640,000
Total for 12 months	<u>£223,840,000</u>

During this period of 12 months the Customs duties levied on goods entering the ports of France amounted to £21,307,000, the additional Government charges on shipping for the first 11 months of the year having amounted to £1,892,000.

The movements of shipping in the ports of France during 1907 were :—

Entered :

	Number.	Tons.
French vessels	85,311	13,929,156
Other nationalities	22,535	20,559,876

Cleared :

French vessels	85,292	13,907,789
Other nationalities	22,657	20,711,126

Mercantile Marine.—The commercial navy of France consists of 17,193 vessels, having a total tonnage of 1,402,647 tons, and embraces 15,639 sailing ships of 662,828 tons and 1,554 steamers of 739,819 tons.

Internal Communications.—The means of internal communication are excellent and render the interchange of goods and produce between different parts of the country both easy and profitable. They comprise a network of 35,192 miles of well made and excellently kept roads ; 150 navigable rivers totalling 5,516 miles in length, of which no less than 4,511 miles are actually navigated by vessels, and 2,832 miles of river water navigable for rafts. These natural waterways are supplemented by numerous canals, having a total length of 3,085 miles, of which 3,032 miles are actually navigated. The water traffic is exceedingly important, and great attention is paid in all parts of the Republic to the construction of canals and to the canalization of rivers. The most important of this water-borne traffic is that between Paris and the northern industrial region by the Oise,

France.

from which a network of canals runs to the Somme, Sambre, Scheldt, Lys, and other rivers in the north, as well as to the important port of entry, Dunkirk. The Aisne is joined up with the Marne by means of a canal, whilst the Rhone and Rhine canal, the longest in France, crossing the Vosges at a height of about 1,100 ft., connects the Rhine above Strassburg with the Seine. The Seine is canalized from the Yonne to its mouth and connected by the Canal du Burgogne and the Canals Hiverais and du Centre, with the Loire and the Saône, the latter continuing the traffic down the Rhone to the Mediterranean and up the Doubs to the Rhine. The Canal du Midi links the Mediterranean with the Garonne. The authorities have also decided to construct a canal from Marseilles to the Rhone. This will start at the Madrague basin and follow the coast until it reaches Estaque, traversing the mountain by a tunnel of $4\frac{3}{8}$ miles, joining the Etang de Berre, then that of Caronte, where it will follow the present route of the Pont-de-Bouc canal to Arles, the latter being enlarged and its locks carried to the proper dimensions. The work on this canal has been started, but will not probably be completed before 1917. These canals have been constructed by, and at the expense of, the State for the purpose of competing with the privately owned railways. These railways, which have a total length of over 25,000 miles, converge from all parts upon Paris. The Western line connects with the ports of Brest (387 miles), Cherbourg (230 miles), Havre (141 miles), and Dieppe; the Northern railway (2,300 miles) with the port of Calais (184 miles) through Abbeville and Boulogne. The great Paris-Lyon-Mediterranean line, 5,400 miles in length, passes by the Yonne to the Saône-Rhone valley, connecting with the Swiss lines and with the Italian lines by Macon and the Mont Cenis tunnel or by Marseilles (536 miles) through the Riviera to Toulon and Nice. The Paris-Orleans railway connects the capital by its main line with Bordeaux (360 miles) and by a branch to St. Nazaire. The Southern line links up the ports of Cette, Beziers, Narbonne, Cerbere, Perpignan, Bayonne and Hendaye with the other portions of the French railway system. France has a State post and telegraph system, together with more than 5,000 urban telephone systems, all of which are highly developed.

Currency, Weights and Measures.—The monetary system of France is the basis of the Latin Monetary Union which was established by a series of Conventions between France, Belgium, Italy, Switzerland and Greece, and which are tacitly continued from year to year. These conventions established a system of money under which gold coins and silver 5 franc pieces of each country are made legally current in each of the other States of the Union, and silver subsidiary token coins, viz., 2 fr., 1 fr., and 50 and 20 centime pieces, authorized to be put into circulation by each country to an amount not exceeding 7 fr. per inhabitant. The unit of moneys of account in France is the franc, $9\frac{1}{4}d.$; 25·225 fr.=£1.

The system of weights and measures is that known as the decimal metric. The metre (=39·37 in. British) is the basis of all weights and measures. Upon the metre are based the following primary units: the square metre, the cubic metre, the litre and the gramme.

MEASURES OF LENGTH.

1 metre	=	39·37 inches.
1 decametre, or 10 metres	=	10·93 yards.
1 hectometre, or 100 metres	=	109·36 „
1 kilometre, or 1,000 metres	=	1093·61

MEASURES OF CAPACITY.

1 litre		=	1.75 Imperial pints.
10 litres	=	1 decalitre	= 2.19 „ gallons.
10 decalitres	=	1 hectolitre	= 21.99 „ „ or 2.75 bushels.
10 hectolitres	=	1 kilolitre	= 3.437 „ quarters.

CUBIC MEASURES.

1 cubic metre or stere = 1.307 cubic yards, or 35.316 cubic feet.

WEIGHTS.

1 gramme		=	15.43 gr. troy.
10 grammes	=	1 decagramme	= 154.32 „ „
10 decagrammes	=	1 hectogramme	= 3.527 oz. avoirdupois.
10 hectogrammes	=	1 kilogramme	= 2.204 lb. „
10 kilogrammes	=	1 myriagramme	= 22.046 „ „
10 myriagrammes	=	1 quintal metrique	= 1.968 cwt.
10 quintals	=	1 tonneau or millier	= 19.684 „ or 0.984 tons.

ENGLISH TERMS AND FRENCH EQUIVALENTS.

1 yard	=	0.914 metres.
1 fathom	=	1.828 „
1 mile	=	1.609 kilometres.
1 cubic foot	=	0.028 cubic metre.
1 cubic yard	=	0.764 „ „
1 quart	=	1.136 litres.
1 gallon	=	4.545 „
1 peck	=	9.092 „
1 bushel	=	3.637 decalitres.
1 quarter	=	2.909 hectolitres.
1 lb. (16 oz.)	=	0.453 kilogrammes.
1 stone (14 lb.)	=	6.350 „
1 quarter (28 lb.)	=	12.70 „
1 cwt.	=	50.80 „
1 ton	=	1016.00 „

Quay Dues.—Vessels of any nationality, with full or partial cargoes, from other countries or from French Colonies (except Algeria), pay quay dues in French and Algerian ports according to the following tariff:—

	Per ton of the vessel's net tonnage.
If the total number of Metric tons (1,000 kilos.) of merchandise discharged or shipped be more than half the net tonnage of the vessel	Fr. c. 1 00
If the total number of Metric tons (1,000 kilos.) of merchandise discharged or shipped be equivalent to or less than one-half the net tonnage of the vessel	0 50
If the total number of Metric tons (1,000 kilos.) of merchandise discharged or shipped be equivalent to or less than one-quarter the net tonnage of the vessel	0 25
If the total number of Metric tons (1,000 kilos.) of merchandise discharged or shipped be equivalent to or less than one-tenth the net tonnage of the vessel	0 10

These dues are reduced by one-half in the case of vessels discharging merchandise from, or shipping merchandise for, ports within the limits of international coasting trade. Vessels discharging and shipping merchandise at the same port are taxed separately, as above, for the two operations.

In the case of operations at successive ports, the dues will be levied at each port, but in no case will the total amount of dues exceed 1 fr. per ton of the net tonnage. This tax is reduced to 0.50 fr. in the case of vessels on international coasting trade.

In the above calculations each passenger embarking or landing is considered as the equivalent of 1 ton of cargo. The same rule is observed in the case of each head of cattle, horse, or mule. Smaller cattle are reckoned as a quarter of a ton; passengers' baggage, including provisions for the voyage, are not reckoned in the estimate of merchandise shipped or discharged.

France.

Quay dues will only be levied in Algeria on cargo, passengers, animals, and carriages landed.

Operations of revictualling and coaling are not considered as commercial operations.

According to this law, the amount of quay dues leviable on a single voyage, even if it include several places of call, cannot exceed 1 fr. per passenger, 2 fr. for each head of cattle or each horse, 3 fr. for every two-wheeled carriage, 4 fr. for every four-wheeled carriage, and 1 fr. per ton of cargo on board the vessel at the time of her entry into French waters, provided that the total weight of the cargo does not exceed the twentieth part of the net tonnage of the vessel.

This maximum will be reduced by one-half, under the same conditions, for packets reserved exclusively for the international coasting trade (*cabotage international*).

The ports included in the INTERNATIONAL COASTING TRADE are those within the limits:—

To the South, the 30th degree of Lat. N.

“ North “ 72nd “ “ N.

“ West “ 15th “ Long. meridian of Paris.

“ East “ 44th “ “ “ “

That is, in general, all European and Mediterranean ports.

Sanitary Dues.—Vessels in French coasting trade, 5 c. per net reg. ton.

Vessels in international coasting trade, 10 c. per net reg. ton.

Vessels from all other ports, 15 c. per net reg. ton.

Passport Duty, or permit to put to sea, 1 fr. 95 c.; in Algeria this costs 50 c.

Quarantine Station Dues paid by vessels put into quarantine, 3 c. per day and per net reg. ton.

Stamp Duties on Bills of Lading.—All goods carried by sea, river, or canal, must have bills of lading. A set is to comprise four. The original, or one given to the captain, must have a stamp of 2 fr., the other three are stamped free of charge.

The stamp is to be 1 fr. on coasting voyages, i.e., from one French port to another.

Bills of lading from foreign ports are subject to the same tax before they can be used. The captain pays 1 fr., and the receiver 1 fr.

Should a set made in France consist of more than five bills of lading, the stamp on all above four to be 50 cents each.

All bills of lading made in France, and not stamped, are liable to 50 fr. (£2) fine. Captains of French and foreign vessels must show their bills of lading to the Customs officers on arrival and departure, to see that they are duly stamped. Each infringement of this law is punishable by a fine—of from 100 fr. (£4) to 600 fr. (£24).

Manifests.—No vessel can import merchandise into a French port without a manifest and copy signed by the *master only*, the copy to be delivered up to the officer of Customs who may board the vessel. Penalty for lack of manifest or refusal of the same, 1,000 fr. Vessels in ballast do not require a manifest. For every package short of the number on the manifest, a fine of 300 fr.; any over and above, a fine of 1,000 fr. is incurred.

France.

Report and Entry.—The master of every vessel, whether in ballast or with cargo, must make the report and entry of vessel and cargo within twenty-four hours after arrival, under a penalty of 500 fr.

Sea Protest.—This extract from the log-book must be deposited at the Custom House, with the report and entry, by all British vessels laden, coming from the United Kingdom or British possessions in Europe ; also by vessels from the United States, to prove that they arrive directly therefrom, and to show the events of the passage, which may be the cause of damage to the cargo. By this proceeding the vessel may obtain the immunities or reduction of duty on the cargo in consequence of such damage. This rule is applicable to vessels putting into French ports windbound, in distress or from other causes.

Pilot Regulations.—Pilotage is compulsory on all vessels above 100 tons if sailing, and 150 tons if steamers ; and also when they move any distance above a cable's length.

The signal to demand a pilot is—for government vessels, ensign at the mainmast head ; for merchant vessels, at the foremast head ; and for both, the ensign abaft at the poop.

If a vessel conducted by a pilot into port, arrives from a country suspected of contagion, and the said vessel be not therefore admitted to pratique, the pilot must conduct the vessel to the place set apart for the sanitary measures and visits, without going on board her, if it be possible. The quarantine flag shall be hoisted at the mizenmast head, and if the vessel has only one mast, the flag shall be fixed to the bowsprit stay, to be visible.

Pilots shall conduct those vessels first in the offing and, in consequence, it is forbidden to give the preference to those at a greater distance, under a penalty of 25 fr.

However, should one of the vessels in sight be in distress, the pilots are then obliged to board her first ; every vessel in danger requiring to be assisted in preference to any other.

If a pilot boards a vessel having a fisherman on board, before the dangers are passed, he shall be received, and the salary of the fisherman be deducted from that of the pilot, according to the distance he may have conducted the vessel.

Immediately on a pilot boarding a vessel, the master thereof is obliged to give him the draught of water of such vessel, under a penalty of liability of all damage, if it be 3 decimetres (12 in. English) less than the actual draught of the water.

The master shall likewise make known to the pilot the vessel's rate of sailing, her qualities and defects, that he may in consequence be enabled to work the vessel.

The masters of French and foreign vessels shall be at liberty to take such pilots as they may think fit, to enter into any port or river, without being subject on departing therefrom to employ the same pilots.

The master of any vessel subject to be conducted by a pilot, entering into or departing from a port, who shall refuse to take a pilot, shall be enforced to pay him his pilotage as if he were employed. In such case, he shall be held responsible for all damage.

France.

It is forbidden to masters to detain their pilots beyond the dangers ; and to the pilots to board vessels against the wish of the master.

The masters of vessels and pilots, who may be compelled by hurricane or other accident to cut their cables and leave their anchors in the roadstead, are obliged to fasten thereto, if it be possible, buoy-ropes and buoys in good condition, and capable of raising such anchors, and to make report thereof.

The anchors and cables shall be picked up as soon as the weather may permit, by the pilots, and conducted to the vessels to which they belong, if such anchors have not been picked up by the ship's crew.

When such anchors shall be picked up, there shall be paid for salvage—

By French vessels.*	If the anchor be without a buoy, one-fourth of the value.
	If the anchor be with a buoy, one sixth of the value.
By foreign vessels.†	If the anchor be without a buoy, one-half of the value.
	If the anchor be with a buoy, one-third of the value.

The same to be estimated by surveyors named by the head-pilot and the master of the vessel.

Pilots shall not exact a greater sum than that mentioned in the tariff rates drawn up in each port, under penalty of restitution of the entire pilotage, etc.

In cases of tempest and evident danger, an additional indemnity fixed by the Tribunal of Commerce, according to the work done and the danger encountered, shall be paid to the pilot by the master.

Emigration.—No one may undertake the work of engaging or transporting emigrants from France without the authority of the Minister of Agriculture, Commerce and Public Works. No such authority will be granted to Emigration Companies or Agencies unless they furnish a security for the due fulfilment of their obligation, which security will be fixed by the Minister of Agriculture, Commerce and Public Works at his discretion, but at not less than fifteen or more than forty thousand francs. This security must be deposited either in cash or by bond properly and jointly guaranteed by a third party who must at all times be prepared, if requested so to do by the Minister, to deposit all or part of the sum guaranteed within fifteen days. If the security is paid in cash it will bear interest at the rate of 3 per cent. per annum and will not be refunded until six months after the declaration by the companies or agencies that they have given up their work, or after the withdrawal of the authorization or the death of the authorized person. If the security is represented by a bond the guarantor will only be discharged from liability after the same space of time. The authorization may be revoked by the Minister at any time in the event of serious abuse. The emigration agents employed by the authorized companies, either in France or other countries, must be provided with Powers of Attorney. The companies will in any event be held responsible for the action of their agents. The owner or captain of every vessel used for the transport of emigrants must advise the port captain and the Emigration Commissioner of the fitting out of the vessel and the time of departure. The vessel must be examined before departure from port in order that a certificate as to its state and the sufficiency of its crew may be granted. The vessel must be provided with a long-boa

* And Foreign vessels assimilated to French vessels.

† Not assimilated to French vessels.

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in proportion to its tonnage and a sufficient number of boats for the contingencies of the journey, taking into account the number of emigrants authorized to be carried. It must be provided with vessels for water, wind sails and other apparatus suitable for ventilation. Within twenty-four hours from the arrival of the emigrants in the port of embarkation, the companies or agencies must have the emigration contract examined by the Emigration Commissioner. Every vessel carrying forty emigrants on board is considered as specially set apart for emigration. Any emigrant who may engage a passage by a vessel having less than forty emigrants on board will be entitled to apply for the intervention of the Emigration Commissioner in questions concerning the quality and quantity of food and the terms of his contract. Every passenger who does not take his meals at the captain's table or that of the officers, and who pays for his passage, meals included, a sum of less than 40 fr. per week for sailing vessels, and less than 45 fr. per week for steamers, calculated upon the length of the voyage, which will be determined by the regulations, is considered an emigrant without further proof. In case of doubt as to the title of emigrant, the Emigration Commissioner will decide.

It is prohibited to load upon a vessel used for the transport of emigrants any goods known to be dangerous or unhealthy, and among others, horses, cattle, gunpowder, vitriol, lucifer matches, guano, raw hides, chemical inflammable products and cheeses, excepting those which are hard and dry and without any odour. The captain or owner must send to the Emigration Commissioner, twenty-four hours before departure, an exact list of the emigrant passengers which he has to transport, with indication as to age, sex, nationality and destination of each one. If after the despatch of this list further emigrant passengers arrive for embarkation, the captain or owner shall send to the Emigration Commissioner as many supplementary lists as are necessary, drawn up in the same manner as described above. The original list, as well as the supplementary lists, of which a duplicate will be annexed to the ship's papers, will be definitely examined and signed by the Emigration Commissioner and by the captain or shipowner at the time of departure. After the conclusion of these definite lists, and before the vessel leaves the basins, the roll of the emigrants on board will be called, and this having been done no new emigrant must be admitted on board the vessel.

No vessel carrying emigrants will be allowed to leave a French port without the captain or owner being provided with a certificate stating that all Government regulations, etc., have been complied with. This certificate is granted after the vessel has been visited and inspected by the Emigration Commissioner and the medical officer. The fees of these officials and other accessory expenses are fixed by ministerial decrees and are at the vessel's charge.

Emigrants are to be allowed on board the day before that fixed for departure and also to remain on board during the forty-eight hours following anchorage in the port of destination, unless the vessel is obliged to leave again immediately.

Every emigrant who is prevented from leaving on account of serious or contagious illness, which has been duly notified, is entitled to the refund of the price paid for his passage. The money is also to be refunded to the members of his family remaining on land with him. If the vessel does

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not leave port on the day fixed by the contract, the responsible agency has to pay an indemnity (the rate of which is fixed by decree, at present, 1908, at 2 fr. 50 c.) to each emigrant for every day's delay for expenses on land. If the delay exceeds six days, and if, in the interval, the agency has not provided for the emigrant's departure by another vessel, and under the conditions fixed by the contract, the emigrant is entitled to break off the contract by a simple declaration made before the Emigration Commissioner, without prejudice to the indemnity which he is to be allowed. If, however, the delay is caused by *force majeure*, reported and accepted by the Emigration Commissioner, the emigrant may not break off the contract, neither claim the indemnity for remaining on land, provided that he is housed and fed, either on board or on land, at the expense of the agency or its representatives.

The agency is responsible for the transport of the emigrant to the place of destination fixed by the contract. Transport must be direct, unless otherwise agreed. In the event of the vessel putting into port, either compulsorily or voluntarily, the emigrants are either to be lodged and fed on board at the vessel's expense during the whole time the ship is in port, or their expenses on land must be made good. In the event of shipwreck or any other accident at sea which would prevent the vessel from continuing its voyage, the agency has to provide, at its expense, for the transport of the emigrant to the place of destination fixed by the contract. In the event of the emigration agencies not having fulfilled their engagements to the emigrants from the time of departure of the vessel, the Minister of Agriculture, Commerce and Public Works proceeds to settle and pay off indemnities, subject to appeal to the Council of State. The recovery of the indemnities so adjusted and paid is to be effected by the Minister of Finance.

Any violation of these regulations is punishable by a fine of from five to fifty thousand francs. In case of a second offence during any one year the fine will be doubled. Any contravention of the provisions of public administration decrees, and ministerial orders made for the carrying out of the said provisions and decrees, as far as the emigration police are concerned, are dealt with and punished in accordance with the penalties mentioned in Art. 470 of the Penal Code.

Offences and contraventions may be reported : (1) in France, by Emigration Commissioners acting as auxiliary police officers, by all judicial police officers, and by the officers or agents invested by a ministerial order, either permanently or temporarily, with the powers of the Emigration Commissioners ; (2) on board French vessels in foreign ports, by consuls, if necessary, assisted by such men of the same occupation as they may think well to appoint.

The official reports are admitted to be true until proved otherwise. They are examined for stamping and entered as a debit balance.

Space.—On board vessels used for the transport of emigrants each passenger is to be allowed :—

(1) 1 metre 30 decimetres square, if the deck is 2 metres 28 centimetres high and more.

(2) 1 metre 33 decimetres square, if the deck is 1 metre 83 centimetres high and more.

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(3) And 1 metre 49 decimetres square, if the deck is 1 metre 66 centimetres high and more.

Children under one year old are not counted in the number of passengers on board, and two children over one and under eight years of age will be counted as one passenger.

Vessels carrying emigrants must have a between-decks, either permanent or temporary, at least 1 metre 66 centimetres high. When vessels carry a sufficient number of passengers to occupy the space fixed according to the basis before mentioned (1 metre 30 decimetres, 1 metre 33 decimetres and 1 metre 49 decimetres per passenger), the between-decks shall be left entirely free, except the parts generally occupied by the quarters of the captain, officers and crew. When the number of passengers is less than the regulation capacity of the vessel, the unoccupied space may be used for the stowing of provisions (meat and fish excepted), luggage, and even a certain quantity of merchandise, all arranged proportionately to the decrease in the number of passengers which could have been put on board.

The berths must have an interior measurement of 1 metre 83 centimetres in length and 50 centimetres in width. There must not be, under any circumstances, more than two rows of berths. The bottom of the lower berths must be raised at least 40 centimetres above the planks of the lower deck, and the bottom of the upper berths must be at half the distance which separates the upper deck from the lower berths, but without half of this distance ever being less than 760 millimetres. The bedding is to be exposed to the air on deck every day, weather permitting. The between-decks are to be disinfected with milk of lime at least once a week.

The Emigration Commissioner will supervise the distribution of berths, which must be, as far as possible, given as follows: those astern to girls and women only; those in the middle to families; and those in the forepart to men, the date of the contract otherwise serving as a basis for the distribution of berths per section.

The vessel shall have on deck and on the forepart two w.c.'s for the use of passengers. There shall also be a w.c. for the use of women only. In the event of the number of emigrants on board exceeding one hundred, a w.c. must be added for each group of over fifty emigrants.

Supplies.—Supplies of provisions, whether taken on board by the emigrants themselves or furnished by the captain or owners of the vessel shall be taken in anticipation of the longest probable duration of the voyage, calculated as follows for sailing vessels:—

(1) For New York and the other ports of the American Union situated on the North Atlantic Ocean	55 days.
(2) For Canada	60 "
(3) For New Orleans	65 "
(4) For the Antilles	55 "
(5) For the Gulf of Mexico and Brazil	70 "
(6) For La Plata	80 "
(7) For countries situated beyond Cape Horn and the Cape of Good Hope north of the equator	120 "

And for steamers and mixed boats having at least 20 h.p. per 100 tons measurement:—

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(1) For New York and the other ports of the American Union situated on the North Atlantic Ocean	33 days.
(2) For Canada	36 "
(3) For New Orleans	39 "
(4) For the Gulf of Mexico and Brazil	42 "
(5) For La Plata	48 "
(6) For countries situated beyond Cape Horn and the Cape of Good Hope south of the equator	80 "
(7) For the same countries north of the equator	120 "

Orders of the Minister of Agriculture, Commerce and Public Works may either modify the above figures or fix the maximum duration of the journeys for destinations not provided for.

The qualities, quantities and kinds of foods with which the emigrant or contractor must supply himself will be examined and fixed for each destination by the Emigration Commissioner.

The vessel shall be supplied with cooking utensils, fuel, and the necessary crockery. There must also be a pair of scales, and weights and measures of capacity, which shall be made use of at the request of passengers.

Medical Comforts.—Every vessel used for emigration shall be provided with a medical chest well furnished, as well as instructions as to the use of the medicines. When the number of emigrants on board a vessel reaches 100, there shall always be on board either a medical doctor, an officer of health, or a sea-doctor.

Immigration.—No emigrant will be allowed to enter France if he does not prove that he has in his possession, on arrival at the land frontier, a sum of 200 fr. for adults and 45 fr. for children from six to fifteen years of age, either in cash or in goods, or upon arrival at the sea-coast, a sum of 150 fr. for adults and 60 fr. for children from six to fifteen years of age, or unless he holds a regular contract which entitles him to be transported across France and his passage to an oversea country. If the contract contains the description of the emigrant as well as the necessary information for establishing his identity, it will be allowed to take the place of a passport after having been examined by the legation or the consulate of France. Examination will be free.

Although this is the law, it would appear that in practice it is more honoured in the breach than in the observance, and that the officials never make any attempt to act on these regulations concerning immigration.

AGDE.

Agde, in lat. 43°18' N., long. 3°26' E., is about 12 miles S.W. of Cette, on the river Herault, which flows into the Gulf of Lyon. The town is about 2 miles from the mouth of the river.

Population.—About 10,000.

Accommodation.—The fairway in the river is 13,120 ft. long and the depth varies from 10½ to 18 ft. at different parts. The only available quayage is at the town itself, where the breadth of the river is 230 ft. and the depth from 10½ to 13 ft. The E. quay, which is chiefly used for fishing boats, is 820 ft. long, and has 8 ft. alongside. The W. quay, which is used for trading vessels, is 1,640 ft. long, with 13 ft. alongside.

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AMBLETEUSE.

Ambleteuse, in lat. $50^{\circ}49'$ N., long. $1^{\circ}36'$ E., is about 6 miles N. of Boulogne.

Population.—About 900.

Accommodation.—The harbour is in a state of ruin; vessels of large draught find the roadstead a good anchorage ground in 7 to 8 fathoms, if waiting for spring tides to enter Dunkirk, etc.

ANTIBES.

Antibes is a small port in lat. $43^{\circ}33'$ N., long. $7^{\circ}8'$ E.

Population.—About 10,000.

Imports.—Salt, fish, etc.

Exports.—Clay, perfumery, tiles, etc.

Accommodation.—Vessels of 14 ft. draught can safely enter the harbour, which is well sheltered, and of easy access. The water area is $9\frac{3}{4}$ acres, length 820 ft., width 492 ft., width of the entrance $239\frac{1}{2}$ ft., depth of the entrance $16\frac{1}{2}$ ft., depth in the harbour $14\frac{3}{4}$ ft., depth along the quays $14\frac{3}{4}$ ft., total length of quayage 1,968 ft.

AUDIERNE.

Audierne is in lat. $48^{\circ}1'$ N., long. $4^{\circ}33'$ W.

Population.—5,500.

Imports.—Coal, oil, salt, wood, groceries.

Exports.—Corn, pit-props, preserved foods.

Accommodation.—The port of Audierne is situated on the right bank of the Goyen. There is a quay here 370 metres ($1,212\frac{1}{2}$ ft.) in length. Vessels with a draught of 10 ft. can enter the port at all tides, but during spring tides vessels of 13 ft. with a favourable wind, or S. wind, are able to land.

Pilotage.—Rates are according to the tonnage of a vessel. From 81 to 100 tons, 15 fr.; from 101 to 150, 16 fr. 50 c.; from 151 to 200, 21 fr.; from 201 to 250, 25 fr. 50 c.; from 251 to 300, 30 fr. Steamers only pay half this tariff.

Port Charges.—**Sanitary Dues** :—10 c. per reg. ton. **Quay Dues** :—50 c. per reg. ton. (These dues are only paid by vessels coming from abroad.) If a vessel is obliged to employ haulers, either in entering or leaving, each hauler receives 1 fr. **Ballast** :—80 to 90 c. per ton, according to the time of year. **Discharging Ballast** :—1 fr. 10 c. to 1 fr. 20 c. per ton. **Labour** :—On board, 4 fr. for working in the hold, and 3 fr. on deck.

BANDOL.

Bandol, in lat. $43^{\circ}10'$ N., long. $5^{\circ}43'$ E., is 7 miles E. of La Ciotat.

Accommodation.—In the bay there is a depth of from 1 to 16 fathoms, shoaling towards the beach; there are 5 fathoms at about $3\frac{1}{2}$ cables from the head of the bay. There is a breakwater which affords shelter to small vessels of 13 ft. draught, moored head and stern between piers.

BARFLEUR.

Barfleur, in lat. $49^{\circ}41' N.$, long. $1^{\circ}16' W.$, is about $1\frac{1}{2}$ miles S. by W. from Cape Barfleur.

Imports.—Coal, wood, and manure.

Exports.—Potatoes and other vegetables, and fish.

Accommodation.—Barfleur is a tidal harbour. Vessels loading or unloading lie alongside the N. quay. At high water ordinary springs there is 16 ft. of water and 9 ft. at neaps. The quayage is 1,266 ft. long.

Pilotage.—Vessels loaded, 15 c. per reg. ton; in ballast, 10 c. per reg. ton.

Ballast.—Delivered on the quay, 1 fr. 25 c. per ton.

BAYONNE.

Bayonne, in lat. $43^{\circ}30' N.$, long. $1^{\circ}29' W.$, is about 4 miles up the river Adour, at the junction of the river Nive.

Population.—About 30,000.

Imports.—Coal, iron ore, creosote, phosphates, pitch, salt fish, grain.

Exports.—Resin, timber, pit-props, salt, ores, flour, forged iron, and steel.

Accommodation.—Bayonne is well sheltered, but subject to strong currents (7 to 8 miles an hour when the river is flooded). Vessels drawing 18 ft. can lie alongside the jetties without grounding. There is a dry dock 338 ft. on blocks, and 356 ft. over all, width at entrance 49 ft., depth of water on sill 20 ft. Repairs to hull and machinery can be carried out. There is a steam crane to lift 30 tons.

The bar at the mouth of the Adour is only to be passed (entering or leaving) at high water in moderate weather or with a moderate sea, generally by day; sometimes by night if light, weather fine, and sea smooth. The channel quickly changes, and is blocked by continuous N.W. winds or a heavy sea rolling in from the Bay of Biscay, generally in summer or after a long drought; it is soon restored by a heavy flood, which, however, renders the passage uncertain.

Vessels drawing from 18 to 25 ft. can enter according to tide. Low water level about 14 ft.; high water ordinary springs 19 to 22 ft.

The draught of vessels permitted to enter is signalled from the Pilot Tower progressively as the tide rises. Vessels approaching are generally boarded by fishermen of St.-Jean-de-Luz and Biarritz; these are licensed, intelligent men, and are to be trusted; capable of steering a ship into the river by signals from the Pilots' Tower, or in case of bad weather can take vessels into St.-Jean-de-Luz, where there is safe anchorage. These men are paid from 25 to 150 fr. according to legal tariff, and must leave the bridge directly a river pilot takes charge of the vessel.

Pilotage.—Sea pilotage not compulsory. River pilotage compulsory.

France—Bayonne (continued).**TARIFF NO. 3. RATES LEVIED BY PILOTS EMPLOYED WITH THEIR BOATS.
COMING IN.**

			Boat.	Pilotage.			Total Tax.					
				Entrance.	Ascent.	Mooring.						
			Fr.	c.	Fr.	c.	Fr.	c.	Fr.	c.		
Vessels from	81 to	120 tons	11	00	2	50	2	50	2	50	18	50
"	"	121 " 180 "	16	80	3	00	3	00	4	00	26	80
"	"	181 " 220 "	19	60	4	00	4	00	5	00	32	60
"	"	221 " 320 "	25	35	6	00	6	00	7	00	44	35
"	"	321 " 420 "	33	20	8	00	8	00	8	00	57	20
"	"	421 " 520 "	42	50	10	00	10	00	8	00	70	50
"	"	521 " 620 "	48	50	12	00	11	00	8	00	79	50
"	"	621 " 720 "	54	00	14	00	12	00	9	00	89	00
"	"	721 " 820 "	60	00	16	00	13	00	9	00	98	00
"	"	821 " 1,000 "	65	50	18	00	14	00	9	00	106	50
"	"	1,001 " 1,200 "	67	50	20	00	15	00	10	00	112	50
"	"	1,201 " 1,500 "	72	25	21	00	15	50	10	50	119	25
"	"	1,501 and above	77	00	22	00	16	00	11	00	126	00

GOING OUT.

			Boat.		Pilotage.		Total Tax.	
			Fr.	c.	Fr.	c.	Fr.	c.
Vessels from	81 to	120 tons	11	00	2	00	13	00
"	"	121 " 180 "	16	80	2	50	19	30
"	"	181 " 220 "	19	60	3	00	22	60
"	"	221 " 320 "	25	35	4	00	29	35
"	"	321 " 420 "	33	20	5	00	38	20
"	"	421 " 520 "	42	50	6	00	48	50
"	"	521 " 620 "	48	50	7	00	55	50
"	"	621 " 720 "	54	00	8	00	62	00
"	"	721 " 820 "	60	00	9	00	69	00
"	"	821 " 1,000 "	65	50	10	00	75	50
"	"	1,001 " 1,200 "	67	50	12	00	79	50
"	"	1,201 " 1,500 "	72	25	13	00	85	25
"	"	1,501 and above	77	00	14	00	91	00

Note.—Vessels remaining on the ocean side of the old glass-works only pay the entrance tariff; those passing this limit pay entrance and ascent. The price for boat and mooring are due in both cases. Steamers pay one-half of entrance fees, ascent, clearance and launches, but they pay the whole for mooring. For every assistance boat which is used in addition to the pilot's, however many are employed, the charge is 12 fr., which is paid in full both by steamers and sailers. For unmooring in the quay of Boucau, including the movements in the roadstead, the total rate is fixed as per following for pilot only:—Vessels under 80 tons, 5 fr.; 81 to 120, 5 fr.; 121 to 180, 6 fr.; 181 to 220, 7 fr.; 221 to 520, 9 fr.; 521 to 1,000, 12 fr.; 1,001 to 1,500, 15 fr.; 1501 and above, 20 fr. This rate is paid in full by steamers as well as by sailers. If entrance, clearance, ascent, or unmooring takes place by night, all rates above mentioned are doubled.

**TARIFF OF RATES TO BE LEVIED FOR PILOTAGE OF STATE VESSELS OR
TRADING VESSELS, IN AND OUT (ROADS AND PORTS OF ST.-JEAN-DE-
LUZ AND OF SOCOA).**

French or Foreign Assimilated.

Vessels under 80 tons (not compulsory)	Fr.
" from 80 to 100 tons.	27
" 101 " 150 "	27
" 151 " 200 "	28
" 201 " 250 "	30
" 251 " 300 "	33
" 301 " 400 "	35
" 401 " 500 "	39
" 501 " 600 "	42
" 601 " 800 "	46
" 801 " 1,000 "	53
" over 1,000 tons	60
	66

France—Bayonne (*continued*).

Foreign vessels not assimilated pay an additional 50 per cent. Steamers only pay one-half of the above rates. In addition to the above rates, the sum of 1 fr. 50 c. is paid to the officer by all vessels entering or clearing, steamers and sailers alike.

**SIGNAL DUES TO BE LEVIED BY THE PILOT CAPTAIN, ENTERING
OR LEAVING.**

			French or Foreign Assimilated.	
Vessels from			Fr.	c.
81 to	120 tons	.	5	50
"	121 "	180 "	6	50
"	181 "	220 "	8	00
"	221 "	320 "	12	00
"	321 "	420 "	18	00
"	421 "	520 "	23	00
"	521 "	620 "	28	00
"	621 "	720 "	33	00
"	721 "	820 "	37	00
"	821 "	1,000 "	45	00
"	1,001 "	1,200 "	53	00
"	1,201 "	1,500 "	61	00
"	1,501 and above	.	70	00

Foreign vessels not assimilated pay 50 per cent. extra. These prices are reduced by one-half for steamers.

Port Charges.—Quay Dues:—Vessels coming from American ports 1 fr. per reg. ton; from European ports, 50 c. per reg. ton. **Sanitary Dues:**—Vessels coming from American ports, 15 c.; from European ports, 10 c.; from French ports, nil. **Passport:**—2 fr. **Chamber of Commerce:**—Entering or clearing with cargo, 30 c. per reg. ton; entering or clearing in ballast, 5 c. per reg. ton. **Tonnage Dues:**—80 c. per reg. ton. **Brokerage:**—Sailers, entering in ballast, 25 c. per reg. ton; leaving in ballast, 25 c. per reg. ton; entering loaded or partly loaded, 50 c. per ton loaded; leaving loaded or partly loaded, 50 c. per ton loaded. Steamers—entering in ballast with or without passengers, 25 c. per reg. ton; leaving in ballast without passengers, 25 c. per reg. ton; leaving in ballast with passengers, 25 c. per reg. ton. Entering loaded or partly loaded with goods other than coal, 50 c. per ton loaded; leaving loaded or partly loaded, 50 c. per ton loaded; entering loaded with coal, 100 fr. for any tonnage; leaving loaded, coal ships, 30 c. per ton loaded; leaving in ballast, colliers, 20 c. with a maximum of 100 fr. for ships over 500 tons. Chartering, 3 per cent. commission.

Pro Forma Charges on a steamer of 1,884 reg. tons, from Rio de Janeiro, with a cargo of ore in and ballast out:—

	Fr.	c.	Fr.	c.
Inwards—				
Pilotage from sea	125	00		
Bar pilotage and up to Bayonne (double by night).	60	50		
Signal dues in	35	00		
Sanitary dues, 15 c. per ton	282	60		
Quay dues, 1 fr. per ton	1,884	25		
Tonnage dues, 80 c. per ton	1,507	30		
Chamber of Commerce dues, inwards, 30 c. per ton	565	30		
Consular fee, about	36	00		
Brokerage, about	1,000	00		
Mooring ropes, 4 ropes, 60 fr. per day, 10 days	600	00		
			6,095	95
Outwards—				
Passport	2	00		
Chamber of Commerce dues, outwards, 5 c. per ton	94	20		
Brokerage, about	100	00		
Carried forward	196	20	6,095	95

France—Bayonne (continued).

	Fr.	c.	Fr.	c.
Brought forward	196	20	6,095	95
Outward:—				
Bar pilotage, out (double by night)	45	50		
Signal dues out.	35	00		
	<hr/>		276	70
			<hr/>	
			6,372	65 = £252 16s. 11d.
			<hr/>	

BINIC.

Binic is in lat. $48^{\circ}36'$ N., long. $2^{\circ}50'$ W.

Exports.—Potatoes, etc.

Accommodation.—The tidal harbour of Binic is at the head of a little bay, half a mile wide, and open to the E. The entrance is between two stone jetties. There is a mole which extends eastward of the eastern jetty, and forms an outward port, where vessels of 10 ft. draught can enter at high water ordinary neaps, and those of 14 ft. $1\frac{1}{2}$ hours before and after high water springs. It is only frequented by small vessels of 30 to 80 registered tons. There is 3,772 feet of quayage.

Port Charges.—The only charge is 50 centimes per ton, loaded or unloaded. Carting away ballast, 1 fr. per ton.

BLAYE.

Blaye, in lat. $45^{\circ}9'$ N., long. $0^{\circ}42'$ W., is about 5 miles above Pauillac, on the river Gironde.

Population.—About 5,000.

Exports.—Wine, brandy, corn, oil, soap, timber, apples, etc.

Accommodation.—Many outward bound vessels call here to take on board provisions, and complete their cargoes.

Many of the Gironde river pilots reside here.

BOULOGNE.

Boulogne is in lat. $50^{\circ}43'$ N., long. $1^{\circ}35'$ E.

Population.—51,201.

Imports.—Coal, cast-iron, steel, machinery, flax, tow, cotton, wool, jute, timber, iron ore, etc.

Exports.—Cement, fruit, potatoes, flour, silks, wine, brandy, eggs, etc.

Accommodation.—There is no bar at the port of Boulogne. The harbour is formed by the Carnot breakwater, which affords protection to the S.S.W. and W. winds. There are 94 acres of sheltered anchorage ground, 42 acres having a depth of 30 ft. at low water spring tides.

Avant-Port.—The entrance channel to this port lies between two jetties, and has a length of 2,132 ft. and a width of from 230 to 250 ft. The depth at spring tides in the channel is, low water 15 to $16\frac{1}{2}$ ft.: high water $40\frac{1}{2}$ to $42\frac{1}{2}$ ft. Avant-Port is 820 ft. long and has 1,640 ft. of quayage. The depth, leading to the wet dock at low ordinary spring tides, is 10 ft., and to the tidal harbour, 16 to 17 ft. On the quays of the Avant-Port and tidal harbour are ten cranes of various powers, and one electric crane of $3\frac{1}{2}$

France—Boulogne (*continued*).

tons. The tidal harbour has a water area of 32 acres, length 2,131 ft., mean width 442 ft.; depth at the entrance, at ordinary spring tides, high 43 ft.; low 16 to 17 ft.; length of quayage, 4,100 ft.; depth alongside the new Quai Gambetta, at low water ordinary springs, 14 to 15 ft.; depth alongside Quai Chanzy varies from 16 to 43 ft., according to the tide. The depth available for vessels wishing to reach Quai Chanzy, at high water ordinary springs, is 41 ft.

The wet dock has an area of 17 acres, length, 1,270 ft.; breadth, 559 ft.; length of the lock, 328 ft.; width of the lock, 69 ft.; length of quayage, 3,436 ft.; depth on the sill at ordinary springs, 29·5 feet. There is 1 crane to lift 15 tons, two to lift 3 and 4½ tons respectively; one to lift 10 tons; and one electric crane to lift 40 tons. The railways run alongside the quays, and vessels can be loaded and discharged with great dispatch. There are two gridirons, the larger taking vessels of 1,500 tons displacement. Repairs to hull and machinery can be carried out.

Pilotage.—Sailing vessels, inwards, loaded 28 c. per reg. ton; outwards, in ballast, 14 c. per reg. ton. Steamers, inwards, loaded or in ballast, 14 c. per reg. ton; outwards, loaded or in ballast, 14 c. per reg. ton.

Port Charges.—Quay Dues and Sanitary Dues:—See **France.**
Dock Gate Dues:—Sailing vessel, 6 c. per reg. ton; steamers, 4 c. per reg. ton. **Brokerage Dues:**—Same as Havre. **Local Dues:**—Sailing vessels and steamers, 60 c. per reg. ton. **Ballast:**—1 fr. per ton.

The local dues have been reduced:—

1. By 60 per cent. when the amount of cargo shipped or landed, expressed in freight tons, does not exceed the fourth part of the net official tonnage.

2. By 40 per cent. when the said amount shall exceed the fourth part, but not the half.

3. By 20 per cent. when it shall exceed the half, but amounts to less than three-fourths.

Vessels having put in at any other French port, and there paid a local tax, shall continue in all cases to profit by the reduction established by the decree of August 6, 1890, when the application of the present order does not ensure a more favoured treatment.

Pro Forma Charges, on a British steamer from the Tyne to Boulogne, 437 reg. tons, carrying 962 tons of coal:—

	Fr.	c.
Pilotage inwards	61	18
„ outwards	61	18
Boat help inwards	6	00
„ outwards	6	00
Moving ship	6	00
Assistance in and out of dock	17	36
Quay dues	218	50
Local dues	262	20
Sanitary dues	43	70
Passport	1	95
Brokerage	127	60
Consulate fees	3	20
Discharging at 1 fr. per 1,000 kilos.	976	45
Hire of gear and gins for unloading	40	00
Telegrams, postage, petty expenses.	12	50
Sweeping quay	1	00

1,844 82 = £73 3s. 11d.

France.

BORDEAUX and PAUILLAC.

Bordeaux, in lat. $44^{\circ}50'$ N., long. $0^{\circ}35'$ W., is situated on the left bank of the river Gironde, 55 miles from the sea. Distance from Liverpool by sea, 671 miles.

Population.—251,917.

Imports.—Fish, coal, coke, briquettes, chemicals, sulphate of copper, timber, wines, spirits, liqueurs, machinery, hardware, ironmongery, hides, skins, wool, rice, oil, grains, bran, etc.

Exports.—Wines, brandy, groundnut oil, chemicals, pitwood, resin, pitch, talc, bauxite, plums, hides, skins, wool, cheese, butter, potatoes, olive oil, gum, etc.

Accommodation.—The river abreast of the town is one-third of a mile wide. There are two channels at the mouth of the Gironde, the N. and the S., on which the least depth at low water is 22 and 16 ft. respectively. Springs rise at the mouth of the river $13\frac{3}{4}$ ft. neaps, $10\frac{1}{2}$ ft.; at Bordeaux 14 ft. and $12\frac{3}{4}$ ft. Bordeaux has direct communication with the Mediterranean by the Canal du Midi, which has an average depth of only 6 ft. During the winter masters of sailing vessels ought not to make land south of the latitude of Isle d'Yeu, in order to be able to run for shelter either to the Roads of Palais (Belle Isle) or to the Pertuis. With a rise of 3.6 metres at the neap tides vessels can come up to Bordeaux with a draught of about 20 ft., and at spring tides with a draught of about 22 to 23 ft., sometimes more, according to the wind. The depth of water varies according to the wind at the mouth of the river; it increases with winds from S.W. to W., and diminishes with winds from N.E to E. Vessels can enter the docks at neap tides with a draught of 17 to 18 ft., and at spring tides with a draught of 20 to 22 ft. The big mail-boats of the Messageries Maritimes, which have a draught of water of about 23 ft., also the different lines that come to this port, are moored alongside the river quays, as the bottom is of soft mud. With a view to increasing the harbour accommodation, work in connection with the construction of a new masonry quay 394 ft. in length has been begun at the upper end of the existing timber wharves on the right bank of the river, and as soon as this is finished an additional length of 328 ft. is promised at the lower extremity. The timber staging of the old wharves is to be strengthened to bear the weight of cranes heavier than those now in use. This total length of 722 ft. will provide additional accommodation for two vessels at one time. Several projects for improving the harbour are now under consideration.

Progress is being made with the building of the first half of the new docks on the left bank of the Gironde, on the site of the former Bassin d'Alimentation. When finished they will give somewhat under 4,000 ft. of quay length, a depth of 29 ft. $6\frac{1}{2}$ in., and will allow the entrance of vessels drawing 28 ft., the width of the entrance being 85 ft. The remaining half of the docks is to be begun as soon as the first half is ready.

Discharging is carried on by means of steam or hydraulic cranes, and by bridges between the vessel and the quay.

The town of Pauillac is situated about 27 miles above the entrance of the Gironde. Vessels of too large draught to ascend to Bordeaux usually discharge here, and outward bound ships provision and water. The Customs officer boards inward bound ships here.

France—Bordeaux and Pauillac (continued).

Every shipmaster must report at the Captain of the Port's office within 24 hours after his arrival, giving his own name, name of the vessel, owner, tonnage, draught, port of departure, and cargo.

Wet Dock.—Length of dock, 5,666 ft. ; width, 459 to 525 ft. ; quayage, 5,709 ft. ; length of the locks (two), 492 ft. ; width of one entrance, 46 ft. ; width of the other entrance, 72 ft. ; depth on the sill at ordinary springs, 27 ft., ordinary neaps, 23 ft. There are eleven ballast cranes, capable of discharging 25 tons per hour each.

River Quayage.—Length of vertical quayage, 7,990 ft. ; length of inclined quayage (for lighters), 3,683 ft. ; depth at high water, 32.8 ft. to 39.4 ft. ; depth at low water, 19.7 ft. There are 29 ballast cranes capable of discharging 25 tons per hour each ; one crane to lift 10 tons, and one to lift 80 tons. Railway lines are on these quays.

There are two dry docks :—

No. 1 is 495 ft. long over all, 72 ft. wide at the entrance, and 26½ ft. deep on the sill.
No. 2 is 361 " " " 52 " " " 23 " " "

Width given is at high water ordinary springs level, and the depth on the sill is at high water ordinary springs.

There are three patent slips, one at Bordeaux to raise 250 tons, and two at Lormont to raise 3,000 and 800 tons respectively.

Shipbuilding is carried on, and there are three firms who undertake repairs.

Pilotage.—Compulsory. No large ship should attempt to enter the Gironde without a pilot. They are sometimes met with 25 or 30 miles from land, and in summer at even a greater distance.

PILOT TARIFF FROM THE SEA TO BORDEAUX, AND VICE VERSA.

	Steam Vessels.		Sailing Vessels.		Sailing Vessels towed.	
	Per Decimetre Draught.	Per reg. Ton.	Per Decimetre Draught.	Per reg. Ton.	Per Decimetre Draught.	Per reg. Ton.
	Fr. c.	Fr. c.	Fr. c.	Fr. c.	Fr. c.	Fr. c.
From the sea to Royan or Verdon, or vice versa :—						
(a) October 1 to March 31.	1 00	0 03	2 00	0 11	1 50	0 0825
(b) April 1 to September 30	0 70	0 02	1 40	0 08	1 05	0 06
From Royan or Verdon to Pauillac, or vice versa	0 50	0 02	1 00	0 08	0 75	0 06
From Pauillac to Bordeaux, or vice versa.	0 70	0 025	1 40	0 08	1 05	0 0675

The tonnage is calculated on the net tonnage. Every fraction of a decimetre is counted as a decimetre. A decimetre is, approximately, 4 inches (3.937 in.). Changes of berth and movements of vessel in the port and docks of Bordeaux shall be paid according to the following tariff :—

	Fr.
(a) From Bacalan to any point above the Cours du Pavé des Chartrous, or vice versa	15
(b) From Lormont to any other part of the port, or vice versa	15
(c) Entrance or departure from the docks	15
(d) Movement inside the docks	10
(e) All other movements or changes	10

Sailing vessels of more than 80 tons, and steamers of more than 100

France—Bordeaux and Pauillac (continued).

tons, must take a pilot to enter or leave the docks, but not to change their berth in the docks. They must likewise take a pilot for any movement to be carried out in the river, with the exception of berthing at the quay or changing berth at the same quay.

The payment of 15 fr. for entering or leaving the docks is in addition to the actual pilotage fee, either ascending or descending. It cannot, in any case, be included in the payments of 15 fr. or 10 fr. pertaining to other movements. There are no special payments for movements carried out with the view of, or at the time of, getting under way.

Each time that the pilot makes use of one or more lighters for mooring or unmooring vessels using their own anchors, they have a right to the following fees :—

		Arrival.	Departure.
		Fr.	Fr.
Vessels of 100 to 199 tons	.	15	20
" 200 „ 399 „	.	20	25
" 400 „ 599 „	.	25	30
" 600 „ 799 „	.	30	35
" 800 „ 999 „	.	35	40
" 1,000 tons and over	.	45	50

These charges, which include all the work necessary for vessels changing berths, are in addition to the other charges mentioned above.

Port Charges.—

Tonnage Dues :—60 c. per register ton, with reduction according to the number of voyages in the same year, and a second tax of 12 c. per ton.

Designations of Vessels.		For the 1st, 2nd, or 3rd voyage made in the same year, from January 1 to December 31.	For the 4th or 5th voyage made in the same year, from January 1 to December 31.	For the 6th or any other voyage afterward made in the same year, from January 1 to December 31.
		Fr. c.	Fr. c.	Fr. c.
1, 2, 3.	Vessel arriving loaded and sailing loaded	0 60	0 50	0 40
4, 5, 6.	Vessel arriving loaded and sailing in ballast, or vessel arriving in ballast and sailing loaded.	0 50	0 45	0 40
7.	Lighters arriving at the port of Bordeaux, with goods coming from a vessel stopped down the river, or leaving the port with goods destined for vessels stopped down the river when it concerns vessels which are not to come to Bordeaux, or for vessels which have not left.	Per register ton of lighter. For every voyage, 0 fr. 30 c.		

Quarantine Dues :—10 c. per reg. ton if from European ports, and 15 c. if from any others. **Sanitary Dues :—**Coasting trade, French, from one port to the other, 5 c. per reg. ton ; foreign, 10 c. per reg. ton ; over-sea, 15 c. per reg. ton. **Tug boat Charges :—**50 c. to 60 c. per reg. ton from Pauillac to Bordeaux, and vice versa. The cost of placing a ton of merchandise alongside a vessel at anchor in the roadstead off the town is 1 rr., paid by the shipper. Use of the crane, 1 fr. per ton, of which the vessel pays 20 c.

France—Bordeaux and Pauillac (*continued*).

Labour:—5 to 6 fr. per day. **Ballast**:—1 to 3 fr. per ton, put on board and trimmed. **Water**:—3 to 5 fr. per ton.

Coal:—20s. per ton. A keel of coal is reckoned at 21,532 kilos.

Brokerage.—

	In Ballast, per ton register. Fr. c.	Loaded, per ton shipped. Fr. c.
Vessels coming from or bound to ports between and inclusive, Nantes and Bayonne	0 10	0 20
Vessels coming from or bound to other ports of France and Algeria	0 15	0 30
Vessels coming from or bound to French Colonies and foreign ports	0 25	0 50
Freights, 2½ per cent.		

Chartering.—On mixed cargo, 2½ per cent. on the amount of freight. By charter-party, 2½ per cent. on the amount of freight or freights, in case of connected voyages.

Translation of Documents.—An ordinary bill of lading, 4 fr.; an extraordinary ditto, 6 fr. for the first page and 4 fr. for every additional page; a protest of bill of exchange, 4 fr. Legal documents:—for the first page (bearing a 1 fr. 50 c. stamp), 6 fr.; second and following pages, 4 fr.

Pro Forma Charges on a steamer of 1,254·40 net reg. tons arriving from the Baltic, discharging 770 stds., say, 2,500 tons in Bordeaux docks, drawing 21 ft. with cargo:—

Pilotage from sea to Bordeaux (21 ft., month of May)	Fr. c.
Sanitary dues	201 21
Harbour movements into docks, etc.	125 40
Request of survey	35 20
Protest at the Tribunal of Commerce	6 60
Tonnage dues on 1,254·40 at 50 c. and stamp.	10 30
Local tax, 12 c. per reg. ton.	627 45
„ 50 c. „ „ (1st voyage)	150 60
Passport	627 20
Pilotage from Bordeaux to sea (19 ft. 8 in.)	1 95
Hauling in and out of docks	193 61
Brokerage inwards, 50 c. per ton discharged	93 55
„ outwards, in ballast, 25 c. per ton register	1,250 00
Stevedore—770 St. Petersburg stds. at 3 fr. 50 c.	313 50
	2,695 00

6,331 57 = £251 4s. 4d.

Pro Forma Charges on a steamer of about 500 net reg. tons, arriving from the Baltic, and bound for Bilbao in ballast:—

Pilotage from sea to Pauillac (16 ft. month of May)	Fr. c.
„ „ Pauillac to Bordeaux	78 60
Harbour pilots	46 10
Pilotage down—11 ft.	30 00
Sanitary dues	30 00
River and harbour dues, and bill of lading stamps	95 20
Noting and extending protest	50 00
Postage and telegrams	251 45
Petty expenses	11 70
Brokerage inwards, 300 stds. at 3·24 t.—972 tons	10 00
„ outwards, 25 c. per ton register	486 00
Mooring dues	125 00
Passport	37 50
Bill of health	1 95
Fresh water, 4 fr. per ton—say 5 tons	27 50
Stevedore discharging, 3 fr. 50 c. St. Petersburg std.	20 00
Local dues, 12 c. per ton	1,050 00
„ „ 50 c. „	60 00
	250 00

2,631 00 = £104 7s. 10d.

France—Bordeaux and Pauillac (*continued*).

Pro Forma Charges on a steamer of 1,905 net reg. tons, calling at Pauillac, drawing 22 ft. and arriving from a European port, to load, 1,000 tons cargo :—

	Fr.	c.	Fr.	c.
Pilotage from the sea to Bordeaux inwards and outwards			498	44
Sanitary dues, 10 c. per reg. ton, and stamp	190	75		
Quay dues, 50 c.	952	75		
			1,143	50
Extra cost of stowage of cargo at Pauillac, and lighterage from Bordeaux to Pauillac for 1,000 tons, at 5 fr. 50 c. per ton	5,500	00		
Of which 2 fr. 25 c. per ton can be recovered from shippers	2,250	00		
			3,250	00
Cost of tender waiting on steamer at Pauillac at 150 fr. per day—say 2 days	300	00		
Inspection and assistance at Pauillac, about	50	00		
Outward manifest, 25 fr. ; passport, 2 fr.	27	00		
Sealing lighters, about	30	00		
			407	00
			5,298	94 = £210 6s. 0d.

Commission and brokerage as may be arranged.

BOURGNEUF.

Bourgneuf is in lat. 47°4' N., long. 1°58' W., the town being about 1½ miles inland.

Population.—About 3,000.

Exports.—Salt and oysters.

Accommodation.—A vessel of 18 ft. draught can anchor in the bay, about 5 miles from the shore. Mean springs rise 16 ft., and mean neaps 11½ ft. The coast, for about 2 miles from the shore, dries at low water.

Pilotage.—A pilot should always be employed, as the navigation is very intricate, the bay being almost blocked up by banks and rocks.

BREST.

Brest, in lat. 48°23' N., long. 4°30' W., is one of the most important of the five naval ports that France possesses.

Population.—85,294.

Imports.—Coal, cement, timber, hemp, flax, and guano.

Exports.—Barley, potatoes, strawberries, and farm produce.

Accommodation.—The original plan of the commercial harbour, dry dock, etc., was designed with a view of increasing the trade of the place, and in order to make Brest an intermediate port between Havre and New York for Transatlantic steamers. The work is scarcely half finished, the Government not having voted the requisite funds, and the trade being too limited to warrant private enterprise to undertake the expense of finishing the contemplated extensive improvements. A new commercial graving dock is now being built, length 753 ft., width 92 ft. at the entrance, depth over the sill 37 ft. The western breakwater has been prolonged and a new eastern one has been constructed, which gives great protection to the anchorage.

The outer harbour has been dredged so as to produce a uniform depth

France—Brest (*continued*).

of water of 27 ft. at low tide, which fully meets all the requirements of a much larger trade than now exists.

The length of deep water quayage is 5,640 ft., with a depth alongside of 52 ft. at high water, and $24\frac{1}{2}$ ft. at low. The length of quayage, dry at low water, is 1,940 ft. The Chamber of Commerce have sheers to lift 20 tons and three hand-cranes to lift 5 tons each. There are three cranes, several staithes for landing coal, at 45 tons per hour, and two pontoon cranes belonging to private firms.

The average depths of water in the basins or inner harbours are :—**Basin No. 1** :—Low tide, deepest part, 7 ft. ; high water, 19 ft. **Basin No. 2** :—Low tide, 9 ft. ; high water, 31 ft. **Basin No. 3** :—The same as No. 2. **Basin No. 4**, with **Gridiron** :—High water between 10 and 12 ft. **Basin No. 5** :—At low water between 25 and 26 ft. ; high water in proportion. The gridiron for repairing vessels of small size, constructed in Basin No. 4. of the harbour, has up to the present time proved of some service.

Admission to the Government docks can always be obtained through the Consul. The gridirons can take vessels of 13 and $12\frac{1}{2}$ ft. draught respectively.

Government No.	1	is	286 ft. long,	74 ft. wide at the entrance,	and	$24\frac{1}{2}$ ft. on the sill.				
"	2	"	241 "	"	75 "	"	"	15 "	"	"
"	3	"	260 "	"	74 "	"	"	23 "	"	"
"	4	"	235 "	"	75 "	"	"	15 "	"	"
"	5	"	379 "	"	71 "	"	"	$30\frac{1}{2}$ "	"	"
"	6	"	223 "	"	$65\frac{1}{2}$ "	"	"	15 "	"	"
"	7	"	410 "	"	92 "	"	"	28 "	"	"
"	8	"	355 "	"	71 "	"	"	$30\frac{1}{2}$ "	"	"
"	9	"	387 "	"	$70\frac{1}{2}$ "	"	"	$30\frac{1}{2}$ "	"	"
Gridiron	"	"	361 "	"	21 "	"	"			
"	"	"	105 "	"	21 "	"	"			

As a port of refuge Brest stands almost unrivalled in Europe ; it has a magnificent roadstead, with good anchorage ; and the coast of Finistère being a dangerous one, vessels frequently take shelter there in stormy weather ; while in cases of casualties to shipping it affords great facilities for repairs, provided the arsenal authorities are appealed to, and are authorized by the Ministry of Marine to undertake such repairs. As a rule these authorities are most ready to meet all emergencies, but they encounter great opposition on the part of private shipwrights, etc., who, in cases of extensive damage, especially as regards iron vessels, do not possess the means to undertake the repairs within a reasonable time. The maritime authorities are at all times most ready to send steamers to the assistance of vessels in distress on the coast.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the Observatory of the Nautical Schools five minutes before the signal. The ball is dropped at 10 h. 0 m. 0 s. a.m. Paris mean time, equal to 21 h. 50 m. 39 s. Greenwich mean time, and 21 h. 32 m. 59·8 s. local mean time. The signal is repeated two minutes later.

Pilotage.—Rates vary according to distance.

Port Charges.—**Quay Dues** :—Vessels from ports in Europe, the Mediterranean, French colonies or possessions, 50 c. per ton ; from other ports, 1 fr. per ton. **Sanitary Dues** :—Vessels from all European ports, 10 c. per ton ; from other ports, 15 c. per ton.

All goods landed or shipped pay 10 c. per package, or, in the case of

France—Brest (continued).

merchandise in bulk, on every cubic metre, or 1,000 kilogrammes. (These dues are paid by the consignee or shipper of the cargo.)

Pro Forma Charges on a steamer of 700 reg. tons, landing about 1,600 tons of cargo, and leaving in ballast:—

	Fr.	c.
Pilotage inwards	113	50
Stamp on bill of lading	1	20
Clearance inwards	12	00
Quay dues, 50 c. per net reg. ton	350	00
Sanitary-dues, 10 c. per net reg. ton	70	00
Town dues, 50 c. per net reg. ton	350	00
Passport	1	95
Clearance outwards	12	00
Brokerage, 50 c. per ton landed	800	00
Pilotage out	50	00

1,760 65 = £69 17s. 2d.

If a vessel leaves with cargo, an additional 25 c. per ton must be added for ship-brokerage.

Daoulas, a small town on the river of the same name, which flows into Brest roadstead, can be reached by vessels of 185 tons burden.

CAEN AND OYESTREHAM.

Caen is in lat. 49°11' N., long. 0°23' W., and Oyestreham in lat. 49°17' N., long 0°15' W.

Population.—Caen, 44,794.

Imports.—Coal, wood, pig-iron, cement, oats, wheat, pitch, nitrates, manure, cotton, etc.

Exports.—Iron ore, building stone, barley, potatoes, vegetables, cattle, oilcake, etc.

Accommodation.—This is a double port, Oyestreham being on the sea-coast, Caen being about 9 miles from the sea, and reached by a canal from Oyestreham harbour; it is approached by two parallel breakwaters. Two wooden jetties direct the channel into the fore-harbour. There is a distance of 43 yds. between these jetties, and the depth of water is 20 ft. at spring tides, and 13 ft. at neaps. There is 17 ft. of water in the canal, which is 72 ft. wide at the bottom and 213 ft. at water-level; there is 39½ ft. between the piers of the narrowest bridge. The canal bridges are now (1908) being widened and when these works are complete, viz., in about a year's time, they will have a width of 52 ft. between the piers.

Oyestreham.—The outer dock is 328 ft. long and 113 ft. wide. The length of quays is 656 ft. The upper lock is 106 ft. long, and the lower lock 103½ ft. long; width at the entrance 54 ft.; depth at high water, on the sill at ordinary springs, 20 ft., neaps 14 ft. There is a half-tide dock 980 ft. long, 135 ft. wide, with 20 ft. of water, the entrance being from the outer dock.

Caen.—There is a wet dock, basin, and tidal harbour. The dock is 1,860 ft. long, 164 ft. wide, with 4,344 ft. of quays. The length of the lock is 96½ ft., width at the entrance 40 ft., depth on the sill 14½ ft. The *bassin* is 1,640 ft. long, 164 ft. wide, has 1,886 ft. of quays, and a depth on the sill of 17 ft. The tidal harbour has 820 ft. of quays,

France—Caen and Oyestreham (*continued*).

with a depth of 14 ft. at high and $9\frac{1}{2}$ ft. at low water. There are 3 steam, 6 hand, and 8 floating cranes. Rails are laid on the docks and the quays are provided with warehouses. A tugboat can be obtained at Oyestreham for towing in or out, or on the canal.

Pilotage.—From the sea to Oyestreham, out to sea from Oyestreham Sailing vessels entering loaded, 26 c. per reg. ton and 10 per cent. ; entering in ballast, 13 c. per reg. ton and 10 per cent. ; going out loaded 18 c. per reg. ton and 10 per cent. ; going out in ballast, 9 c. per reg. ton and 10 per cent. Steamers entering loaded or in ballast, 13 c. per reg. ton and 10 per cent. ; going out or in ballast, 9 c. per reg. ton and 10 per cent. Sailing vessels are considered loaded if their cargo is equal to or exceeds more than one-third of their net reg. tonnage. Vessels coming in for shelter pay only half these rates ; going out they pay full rates. Vessels belonging to nations the shipping of which is not assimilated to that of France pay one-half more.

Canal Pilotage.—For the passage of vessels *each* way up and down, under 100 tons reg., 6 fr., and for every additional 50 tons, 50 c. extra.

Port Charges.—Sanitary Dues:—Vessels from European ports, 10 c. per reg. ton ; from ports out of Europe, 15 c. per reg. ton. **Town Dues:**—Vessels from European ports, 20 c. per reg. ton, and 20 c. per ton of cargo whether in or out. Vessels from ports outside Europe, 30 c. per reg. ton, and 30 c. per ton of cargo whether in or out. **Quay Dues:**—Vessels from European ports, 50 c. per reg. ton ; from ports outside Europe, 1 fr. per reg. ton. **Sea Pass:**—For all vessels, 1 fr. 20 c. **Stamps:**—25 c. on quay dues receipt ; 75 c. on sea pass ; 10 c. on town dues receipt. The receipt for sanitary dues is free of stamps.

Ship-brokerage.—Sailing vessels entering in ballast, $12\frac{1}{2}$ c. per reg. ton ; clearing in ballast, nil ; entering with full or part cargo, 50 c. per ton of cargo ; clearing with full or part cargo, 25 c. per ton of cargo. Steamers entering in ballast, with or without passengers, $12\frac{1}{2}$ c. per reg. ton ; clearing in ballast, without passengers, nil ; clearing in ballast, with passengers, $6\frac{1}{2}$ c. per reg. ton ; entering with a full or part cargo consisting of pitch, coal, pig-iron, or ore, 25 c. per ton of cargo for the first 1,000 tons, and 20 c. afterwards ; of wood, iron, ice, grain, manure, 40 c. per ton of cargo for the first 1,000 tons, and 30 c. afterwards ; with cargo consisting of other goods, 50 c. per ton of cargo for the first 1,000 tons, and 40 c. afterwards ; clearing with a full or part cargo, half the charges paid by steamers entering with cargo.

Towage.—From the sea to the lock, loaded vessels 60 c. per reg. ton, and 10 c. per ton cargo ; vessels in ballast, 20 c. per reg. ton, and the same charge from the lock to the sea. Minimum charge for one sailing vessel, 30 fr. ; two vessels, 40 fr. ; three vessels together, 50 fr. Steamers as per agreement. **Ballast:**—1 fr. to 1 fr. 25 c. per ton.

Water.—Vessels of 100 tons, 5 fr. ; 600 tons, 15 fr.

Discharging Dues.—Coal, 1 fr. per ton, stipulated in charter. Pig-iron, 80 c. per ton, not stipulated in charter. Wood, 2 fr. to 2 fr. 50 c. per standard, stipulated in charter.

Loading barley, 25 c. if loose, and 6 c. if in bags.

Boat assistance in Oyestreham, 2 fr. per boat, 2 fr. for each man. Boat and men running lines up and down canal, 10 fr. each. Boat and men shifting berth, as per agreement. Pilot shifting berth, 5 fr.

France—Caen and Oyestreham (continued).

Pro Forma Charges on a steamer of 600 reg. tons, 1,000 d.w. from a foreign port in Europe:—

	Coal in. Iron Ore out.	Coal in. Ballast out.	Ballast in. Iron Ore out.
	Fr. c.	Fr. c.	Fr. c.
Sea pass, Quay dues and stamps.	302 20	302 20	2 00
Sanitary dues	60 00	60 00	60 00
Town dues	550 00	320 00	320 00
Pilotage, sea to Caen	96 80	96 80	96 80
„ Caen to sea	70 40	70 40	70 40
Postage and sundries	25 00	25 00	25 00
Brokerage, in	250 00	250 00	75 00
„ out	125 00	—	125 00
	1,479 40 = £58 14s. 0d.	1,124 40 = £44 12s. 3d.	774 20 = £30 14s. 4d.

Pro Forma Charges on a steamer of 380 reg. tons, 600 tons d.w. from a port outside Europe:—

	Coal in. Iron Ore out.	Coal in. Ballast out.	Ballast in. Iron Ore out.
	Fr. c.	Fr. c.	Fr. c.
Sea pass, quay dues and stamps.	382 20	382 20	2 00
Sanitary dues	57 00	57 00	57 00
Town dues	493 00	294 00	294 00
Pilotage, sea to Caen	63 34	63 34	63 34
„ Caen to sea	46 62	46 62	46 62
Postage and sundries	15 00	15 00	15 00
Brokerage, in	150 00	150 00	47 50
„ out	75 00	—	75 00
	1,282 16 = £50 17s. 5d.	1,008 16 = £40 0s. 0d.	600 46 = £23 16s. 6d.

CALAIS.

Calais, in lat. 50°57' N., long. 1°50' E., lies about 11½ miles N.E. of Cape Gris Nez, 20½ miles S.E. ½ S. from the South Foreland lighthouse.

Population.—66,627.

Imports.—Wool, cereals, cotton, coal, pig-iron, petroleum, wood pulp, timber, etc.

Exports.—Lace, tulle, cereals, wool, sugar, glass and porcelain, tissues, wines, hay, etc.

Accommodation.—The entrance to the harbour and docks is through a channel 430 ft. wide, with a depth of 37 ft. 9 in. at high water springs and 33 ft. 5 in. at neap tides, formed by two piers, 1,700 ft. long, trending in a N.N.W. and S.S.E. direction. There is 14 ft. 11 in. water in this channel at low water springs. In Calais Roads, a mile N.W. of the mouth of the channel, there is 33 ft. water at low water, with good holding ground.

The New Tidal Harbour is 560 ft. wide, with 2,790 ft. of quay frontage, and a depth at high water at the S. quay at ordinary spring tides of 46 ft. 5 in., and 42 ft. 4 in. neaps, and at low water ordinary spring tides 25 ft. 3 in., and 30 ft. 2 in. neaps, so that vessels discharging or loading thereat

France—Calais (*continued*).

are always afloat. The depth of water at the N. quay at high water is—ordinary high tides 37 ft. 9 in., and neaps 33 ft. 5 in.; at low water ordinary spring tides there is an available depth of 14 ft. 11 in., and neaps 18 ft. 9 in.

Sheds of 130 ft. in breadth, with overhanging roofs on either side, and 525 ft. in length, have been erected on the S. quay; and on the same quay are three powerful travelling hydraulic cranes, one capable of lifting weights up to 5 tons, and the other two of the ordinary capacity. There are two floating docks here, the Carnot Dock and the West Dock.

The Carnot Dock is entered by means of two locks parallel to each other, the N. lock having a width of 46 ft., and the S. lock 69 ft.; both locks have a length between the gates of 451 ft. 3 in., and a depth of water on the sills of 29 ft. 5 in. in ordinary spring tides, and 25 ft. 2 in. ordinary neaps. The gates and bridges of the whole are moved by hydraulic power.

This dock has a water area of 29 acres, its length being 3,275 ft., and breadth varying from 425 ft. to 600 ft., with a quay frontage of 6,315 ft. These quays are supplied with fifteen travelling cranes, each of 30 cwt. lifting power, two of 5 tons each, and one of 40 tons of two powers, the smaller power supplied with a cradle for lifting loaded railway wagons from off the rails; and in addition there are numerous movable hydraulic jiggers. Sheds similar to those in the Tidal harbour have been erected on the West quay to a length of 1,310 ft., capable of storing any ship's cargo. The quays are traversed by eight lines of rail. At the southern end there is a dry dock 509 ft. long, with a depth and width of entrance equal to that of the largest of the locks.

The Old Tidal Harbour has a length of quay of 2,525 ft., and a depth of water of 29 ft. 5 in. ordinary spring tides, and 25 ft. 2 in. neaps. This old harbour leads to the Old or Western Dock, the entrance of which is 55 ft. 8 in. in width, with a depth of water on the sills of 29 ft. 5 in. ordinary spring tides, and 25 ft. 2 in. on neap tides—the water area of the dock is seven acres in extent, and is 2,300 ft. long by 246 ft. wide, with a quay frontage of about 4,000 ft. There is a 10 ton hand crane. Both the Old Tidal Harbour and dock are well supplied with railways running close alongside the shipping.

There is also a canal dock, with a water area of 10 acres and depth of 10 ft., width 190 ft., and quayage of 5,280 ft. In this basin, lighters and canal boats await orders without being in the way of navigation.

The Calais Canal, which is connected with both docks, communicates with the whole of the internal navigation of France, a navigable river and canal system of 7,594 miles actually navigated, belonging (with the exception of some 534 miles) to the State, and all of one uniform size throughout. Boats with a carrying capacity of 400 tons use these canals.

The depths of water which will become greater, as dredgers are continually working, are officially given as follows:—

DEPTHS AT HIGH WATER.

		Ft. in.
Pier head	{ Spring tides	37 9
	{ Neap tides	33 5
Dock gates on lock sills (Carnot Dock)	{ Spring tides	29 5
	{ Neap tides	25 2
South quay of the Tidal Basin	{ Spring tides	46 5
	{ Neap tides	42 4

France—Calais (*continued*).

DEPTHS AT LOW WATER.

		Ft.	in.
South quay of the Tidal Basin	Spring tides	26	3
	Neap tides	30	2
Wet dock (Carnot Dock)	Spring tides	29	5
	Neap tides	25	2

Both the harbours and floating basins are well sheltered from wind and sea, but a swell runs into the entrance channel from half-flood to half-ebb, when it blows strong from the northward or eastward.

Tides.—It is high water, on the days of full and change, at Calais at 11 h. 49 m. Springs rise $25\frac{1}{4}$ ft., neaps 20 ft.

The mean duration of the flood stream at springs, in front of the entrance, is $5\frac{1}{2}$ hours, and of the ebb $7\frac{1}{4}$ hours. At half a mile outside the pier the flood runs $2\frac{1}{2}$ hours after high water in the harbour, and with strong westerly winds $3\frac{1}{2}$ hours; with easterly winds it continues only $1\frac{1}{2}$ or 2 hours. The rate of the flood at great springs is 4 knots. The slack at high water springs continues about 20 minutes, at neaps it often amounts to $1\frac{1}{2}$ hours.

Lifeboats.—Two lifeboats are stationed at Calais; one on the east, and one on the west of the port.

TIME ALLOWED FOR LOADING AND DISCHARGING CARGOES.

Steamers for or from any part of the world:—

Up to 250 tons	net register	4 days.
From 251 to 500	"	5 "
" 501 to 750	"	6 "
" 751 to 1,000	"	7 "
Above 1,000 tons	"	1 day in addition per 400 tons net register, or fraction thereof.

Sailing ships for or from any part of the world:—

Up to 300 tons	net register	8 days.
From 301 to 500	"	9 "
" 501 to 700	"	10 "
Above 700 tons	"	1 day in addition per 250 tons net register, or fraction thereof.

The allotted days, applicable to steamers and sailing vessels, are in all cases running days, exclusive of Sundays and legal fête holidays. Vessels laden with timber direct from America are allowed five days in addition, whatever their tonnage may be. All previous regulations and customs contrary to the aforesaid are cancelled. The periods of time allowed to any vessel for discharging or loading begin to run from the day after she is made fast alongside. When the unloading is over, vessels are immediately to take in their ballast. Four days at the utmost are allowed for this work, and when the time is expired they must remove from their quay berth, and leave the wet dock, should the harbour officers deem it necessary.

Pilotage.—Calais pilots attend vessels bound for the harbour, even at a distance of 30 or 40 miles from it. Powerful tugboats are always ready, with steam up. Pilotage dues for sailing vessels above 100 tons and for steamers above 150 tons are compulsory. Sailing vessels laden, in and out—50 c. per net reg. ton; sailing vessels in ballast, in and out— $12\frac{1}{2}$ c. per net reg. ton; steamers laden or in ballast, in and out (together)—25 c. per net reg. ton. Foreign vessels not assimilated to French pay one-half over the rates fixed above.

Port Charges.—**Tonnage Dues:**—Coasting vessels, 50 c.; oversea vessels, 1 fr. per net reg. ton. **Sanitary Dues:**—Coasting vessels, 10 c. per net reg. ton; oversea vessels 15, c. per net reg. ton. **Chamber of Commerce Dues:**—60 c. per net reg. ton. **Dock Dues:**—6 c. per net reg. ton.

France—Calais (*continued*).

The total inclusive charges on vessels entering and leaving Calais harbour upon each ton of freight, with a cargo only one way, are as follows :—

1.—Coasting vessels :—

Steamers laden with coals	1s. 9d. per ton dead-weight.
„ „ pig-iron	1s. 11d. „ „ „

2.—Black Sea and European ports, with the exception of the above-mentioned cargo :—

Steamers loaded with grain	1s. 2d. per ton of wheat, other grain in proportion.
„ „ timber	2s. 0d. per ton of timber.

3.—Oversea trading vessels :—

Steamers laden with wheat	1s. 8d. per ton of cargo, other grain in proportion.
Sailing vessels „ „	2s. 10d. „ „ „

Towage.—1st zone : From any part of the tidal basin, the stranding harbour, or the channel to the distance of a mile beyond the pier head—inwards, 40 c. per ton register ; outwards, 20 c. per ton register. 2nd zone : From any part of the tidal basin, the stranding harbour, or the channel to 4 miles or thereabouts off the pier head—inwards, 60 c. per ton register ; outwards, 40 c. per ton register. 3rd zone : From any part of the tidal basin, the stranding harbour, or the channel to 7 miles or thereabouts off the pier head, or vice versa—inwards and outwards, per ton register, 90 c.

Minimum charges.—Inwards : one ship, 30 fr. ; two ships at the same time, 40 fr. ; more than two ships at the same time, 50 fr. Outwards : one ship, 20 fr. ; two ships at the same time, 30 fr. ; more than two ships at the same time, 40 fr.

When several ships are taken in tow at the same time each has to pay a minimum share proportional to her tonnage.

Movements within the Harbour.—The dues relative to movements within the harbour are as follows :—

	Fr.	c.
1. For ships shifting from any part whatsoever of the stranding harbour, the tidal basin to one of the floating docks, or vice versa, per ton register	0	10
2. For ships shifting within the floating docks, per ton register	0	05
3. For steamers not being taken in tow, but assisted in their shifting by a steam-tug, per ton register	0	10

Brokerage.—Same as at Havre and Dunkirk.

The charge for using hydraulic cranes, with man, is 40 fr. per day of 10 hours, and 60 fr. per night of 10 hours. Charge for use of gridiron, 10 c. per ton per day.

When a ship has not sufficient coal to pursue her course, the action on her part of touching at the port of Calais with the sole object of supplying her bunkers constitutes neither a voluntary stoppage nor a commercial operation. It is therefore considered as a compulsory entry into the harbour, and, in consequence, the ship is exempted from port dues, as well as quay dues and health dues. Pilotage only is to be paid.

Such dues are, however, payable if the ship takes on board a greater quantity of coal than that necessary to replenish her bunkers.

Vessels entering the port and leaving again without loading or discharging any cargo pay only pilotage dues.

Vessels touching at Calais, from whatever port or place they may arrive, and whatever may be their port or place of destination, shall have the benefit of abatement as follows :—

France—Calais (*continued*).

1. On the tonnage dues actually levied at Calais, in pursuance of the law of December 4, 1888, and decree of March 4, 1895.

2. On the dues levied at Calais in pursuance of decrees dated October 3, 1883, and March 4, 1895.

Such abatement shall be scaled as follows: 60 per cent. when the quantity of goods shipped or landed, computed according to freight tonnage, shall not be above the fourth part of the net register tonnage; 40 per cent. when such quantity shall be above the fourth part of the register tonnage, but shall not exceed one-half; 20 per cent. when such quantity shall be above one-half of the register tonnage, but shall not exceed three-fourths thereof.

Vessels coming either from foreign countries and colonies or from a French port on the Mediterranean Sea, entering the port of Calais after having touched at any other French port on the Atlantic Ocean or English Channel, where a local tax shall have previously been paid, shall continue to enjoy the benefit of the abatement authorized by the law dated December 4, 1888, whenever the application of the foregoing clause shall not afford them a more advantageous treatment. All the provisions of the said law shall remain in force.

Pro Forma Charges on a steamer of 1,334 tons net reg., with a cargo of coal in, and ballast out, drawing 21 ft. loaded:—

	Fr.	c.
Harbour dues at 1 fr. 20 c. per reg. ton	1,601	00
Brokerage on 3,079 tons cargo	233	95
Pilotage, in and out	333	50
Towage (if required)	133	40
Boat hire, in and out	30	00
Other charges, about	150	00
	<hr/> 2,481	<hr/> 85 = £98 9s. 5d.

CAMARET.

Camaret, in lat. 48°16' N., long. 4°36' W., is situated in the S.W. corner of the bay of the same name.

Accommodation.—This small port is only frequented by small craft. Vessels of 150 to 200 tons, drawing less than 12 ft., can enter the port, but cannot at times approach the quays. The bay affords shelter from all winds except the north and west.

The charges are trifling, a vessel of 30 reg. tons having only paid 4s. 8d.

CANCALE.

Cancale, in lat. 48°40' N., long. 1°50' W., is 9 miles N.E. of St. Malo.

Population.—About 7,000.

Export.—Oysters.

Accommodation.—Cancale is chiefly frequented by coasters. There is a good anchorage in 5 or 6 fathoms three-quarters of a mile from the shore. The tidal harbour has 230 ft. of quayage, with a depth alongside, at high water spring tides, of 20 ft., but dry at low water. There is a crane to lift 1 ton.

CANNES.

Cannes is situated in lat. 43°31' N., long. 7°0' E.

Population.—33,000.

Imports.—Coal and wood.

Exports.—Almost nil, steamers generally leave with water ballast.

Accommodation.—The port of Cannes is protected by a mole, at the end of which is the lighthouse. There is a breakwater which protects the harbour from S.W. winds. A new pier (Albert Edward jetty) has been built for the accommodation of yachts. The water area of the harbour is 29½ acres, dimensions 1,148 ft. by 1,148 ft.; width at the entrance, about 459 ft.; depth at the entrance, 23 ft.; depth in the harbour, 16½ ft.; depth along the quays, 16½ feet; total length of quays, 1,181 ft.

Pilotage.—There are no professional pilots at Cannes, but the local fishermen generally undertake this work, if required. There is therefore no fixed tariff, but it is generally 100 to 150 fr., according to tonnage.

Port Charges.—**Harbour Improvement Dues:**—35 c. per ton of goods shipped or landed. **Quay and Health Dues:**—See **France.** **Labourage:**—1 fr. per ton. **Water Supply:**—7 fr. 50 c. per hour; the hoses used supply about 15 tons per hour.

Brokerage.—Charges are not fixed, and must be a matter of arrangement between the parties.

Pro Forma Charges on a steamer of 739 net reg. tons, carrying 1,247 tons of coal:—

	Fr.	c.
Cash advanced to master	100	00
"Droits de Navigation" at 50 c.	370	00
Health dues at 10 c.	74	00
Harbour improvements at 35 c.	436	45
Passport	2	00
¹ Hire of baskets and planks	200	00
² Interpreter	20	00
² Mooring boat	20	00
³ Pilot	100	00
Fresh water (use of hose for 6 hours)	45	00
Greek Consul at Nice and railway fare	22	75
Consular fees (British)	15	85
Postage and telegrams	13	40
Broker's fee	125	00
⁴ Discharging at 1 fr. per ton of cargo (1,247 tons)	1,247	00

2,791 45 = £110 15s. 2d.

¹ Should be included in price charged at ⁴.

² Not necessary.

³ Rather high.

CARENTAN.

Carentan is in lat. 49°18' N., long. 1°15' W.

Population.—About 4,000.

Imports.—Coal, etc.

Exports.—Eggs, butter, poultry, hogs, etc. There are no return cargoes, the exports being in the hands of one or two vessels trading regularly between Carentan and England.

Accommodation.—The port is small, and the river narrow and difficult of navigation. The channel is buoyed, red buoys being kept

France—Carentan (*continued*).

to starboard, and black buoys to port. The entrance is dangerous, and should not be attempted without a pilot. There is a large tidal basin, having an entrance from the sea. This basin contains three locks, and has a quay 820 ft. long.

The Wet Dock is 4,757 ft. long, and from 197 to 392 ft. wide. It is entered by a lock 137 $\frac{3}{4}$ ft. long, 39 ft. wide at the entrance, and with 13 $\frac{1}{2}$ ft. on the sill at high water ordinary spring tides. The outer sill of the lock is dry at low water.

Vessels drawing 13 ft. at springs, and 7 to 8 ft. at neaps, can come here.

Pilotage.—In winter, vessels generally call at St. Vaast-la-Hougue for a pilot, paying supplemental pilotage, 8 fr.

Port Charges.—**Quay Dues** :—50 c. per reg. ton. **Sanitary Dues** :—10 c. per reg. ton. **Ballast** :—1 fr. per ton. **Towage** :—1 fr. per reg. ton.

Pro Forma Charges on a vessel of 92 tons register, cargo in and ballast out :—

	Fr.	c.
Pilotage in	29	00
„ out	19	30
Towing up the river by horses	16	00
Port dues	55	20
<hr/>		
	119	50 = £4 14s. 10d.

CASSIS.

Cassis, in lat. 43°12' N., long. 5°33' E., is 9 miles S.E. of Marseilles.

Accommodation.—Cassis is a small but safe port, and can accommodate vessels of 13 ft. draught, moored head and stern. It is formed by a mole projecting nearly two cables W. from the eastern shore; the entrance is from 65 to 70 yards wide. With strong winds from the S. it is dangerous to enter, in consequence of the heavy sea at the entrance, and it is better to make for Port Miou.

CAUDEBEC.

Caudebec, in lat. 49°32' N., long. 0°43' E., is a small town and port in the department of Seine-Inférieure, on the right bank of the Seine. It is nearly half-way between Havre and Rouen.

Population.—About 2,300.

Accommodation.—This port is only visited by vessels of about 100 register tons. It is safe and commodious.

CETTE.

Cette is in lat. 43°24' N., long. 3°40' E.

Population.—34,500.

Imports.—Wine, wood, resin, corn, sulphur, fruit, and iron ore.

Exports.—Wine, salt, fruit, etc.

Accommodation.—The port is formed by two long moles running out from the E. and W., and a breakwater across the heads of these moles a little distance to the S., thus affording perfect shelter to shipping.

All the docks and canals are in communication with Avant Port, from which place they have their entrances.

France—Cette (*continued*).

Vieux Bassin.—Water area, $19\frac{3}{4}$ acres ; length, 1,312 ft. ; breadth, 656 ft. ; width of entrance, 656 ft. ; depth of entrance, 23 ft. ; depth in the dock, $16\frac{2}{3}$ to 23 ft. The sides are not available for use as quays for large vessels.

Nouveau Bassin.—Water area, $17\frac{1}{4}$ acres ; length, 1,049 ft. ; width, 1,017 ft. ; width of entrance, 180 ft. ; depth at entrance, 24 ft. ; depth in the dock, 24 ft. ; length of quayage, 3,267 ft. ; depth alongside, 24 ft.

Bassin à Pétrole.—Water area, $3\frac{1}{4}$ acres ; average length, 426 ft. ; average width, 295 ft. ; width of entrance, 262 ft. ; depth of entrance, 24 ft. ; depth in the dock, 24 ft. ; length of quayage, 410 ft. ; depth alongside the quays, 23 ft.

Bassin de la Cie du Midi.—Water area, $9\frac{3}{4}$ acres ; length, 1,312 ft. ; width, 328 ft. ; width at entrance, 328 ft. ; depth at entrance, 24 ft. ; depth in the dock, $16\frac{2}{3}$ to 23 ft. ; length of quayage, 3,087 ft. ; depth at quayside, $11\frac{1}{2}$ to $19\frac{3}{4}$ ft. There is a crane to lift 10 tons and six cranes to lift 3 tons.

Chenal.—Water area, $6\frac{2}{3}$ acres ; width, from 121 to 262 ft. ; depth at entrance, 23 ft. ; depth in the canal, $16\frac{2}{3}$ to 23 ft. ; length of quayage, 2,962 ft. ; depth at quayside, $16\frac{2}{3}$ to 23 ft.

Canal Maritime (S. of the Darse de la Peyrade).—Water area, $8\frac{3}{4}$ acres ; length, 1,771 ft. ; width, 216 to 223 ft. ; depth at the entrance and in the canal, 24 ft. ; length of quayage, 3,103 ft. ; depth alongside the quays, 23 ft. There is a crane to lift 15 tons.

Canal Maritime (N. of the Darse de la Peyrade).—Water area, 10 acres ; length, 1,312 ft. ; width, 328 ft. ; depth at entrance and in the canal, 24 ft. ; length of quayage, 2,103 ft. ; depth at the quayside, 23 ft. The canal is crossed by 3 swing-bridges, the available breadth being 69 ft.

Canal Latéral.—Water area, $13\frac{1}{2}$ acres ; length, 1,771 ft. ; width, 328 ft. ; depth at entrance, 24 ft. ; depth in the canal, 24 ft. ; length of quayage, 1,666 ft. ; depth at quayside, 24 ft. The swing-bridge gives an entrance 69 ft. wide.

The St. Clair lighthouse, erected 92.35 metres ($302\frac{1}{2}$ ft.) above sea-level and visible 35 miles, marks the landing places of the port. Repairs can be executed here. There is no dry dock.

Pilotage.—Vessels coming from :—

	Ocean Ports.		Mediterranean Ports.	
	Sailers.	Steamers.	Sailers.	Steamers.
Entrance	Fr. c. 0 10 per reg. ton	Fr. c. 0 05 per reg. ton	Fr. c. 0 05 per reg. ton	Fr. c. 0 025 per reg. ton
Clearance	0 06	0 03	0 06	0 030
Rate for keeping up watch	0 02	0 02	0 02	0 020

OPTIONAL TARIFF (ENTRANCE).

	Sailer.	Steamer.
	Fr. c.	Fr. c.
1st line, day-time (6 miles)	0 25 per reg. ton	0 12 per reg. ton
2nd line, day-time (3 to 6 miles)	0 15	0 075
3rd line, day-time (less than 3 miles)	0 08	0 040
1st line, at night (3 miles)	0 25	0 125
2nd line, at night (less than 3 miles)	0 10	0 050

France—Cette (continued).

TOTAL RATES TO BE PAID FOR PILOTAGE ENTERING AND LEAVING.

Vessels coming from :—

	Ocean Ports.		Mediterranean Ports.	
	Sailers.		Sailers.	
	Fr. c.		Fr. c.	
1st line, day-time.	0 43	per reg. ton	0 38	per reg. ton
2nd line, day-time.	0 33	" "	0 28	" "
3rd line, day-time.	0 26	" "	0 21	" "
1st line, at night.	0 43	" "	0 38	" "
2nd line, at night.	0 28	" "	0 23	" "

Canal Dues.—Non-assimilated vessels over 60 tons pay to enter the canals, 11 c. per reg. ton (maximum 17 fr.). Inside the channels, mooring, 4 fr. Foreign vessels non-assimilated pay one-half over and above, except for watching rates, which are uniformly fixed at 0.02 fr. per ton. Ships which having left the port, and are obliged to return, pay entrance dues, but not their second clearance. Changing berth, 4 fr.; non-assimilated ships, 6 fr.

Port Charges.—**Town Dues** :—10 c. for every man of the crew and for every day the vessel remains in port. **Light Dues** :—2 fr. 50 c. per day per vessel. **Brokerage** :—Vessels coming from Mediterranean ports, 10 c. per ton; from other ports, 20 c. per ton.

Discharging Dues.—**Steamers** :—Non-coagulated resin (from the hold into the wagon), 1.75 fr. per ton; coagulated (ditto), 1.75 fr. to 2.50 fr. per ton. Coal (from the hold into the wagon), 1.15 fr. to 1.25 fr. per ton. Minerals, sulphur, phosphates, and other heavy goods in bulk (under tackling), 0.90 fr. to 1 fr. per ton; (from the hold to the wagon) 1 fr. to 1.25 fr. Wood, Planks, and Staves (from the hold into the wagon), 1 fr. to 1.25 fr. per ton. Wines (from hold under tackling), 0.90 fr. per ton; (from under tackling on the quay) 0.70 fr. Corn and Maize (from hold under tackling), 1.60 fr. per ton. Oats (ditto), 2.40 fr. per ton. Corn in Transit (from vessels on lighters or canal barges), 1.75 fr. per ton.

Hire of Lighters.—From 6 to 9 fr. per day per lighter.

Ballast.—Per ton :—

	Fr. c.
Taken from the storehouse in small boat	1 40
" to " " in "	0 47
Loaded from boat to quay : by the crew	0 93
" " " " by the contractor	1 40
Unloaded from boat to quay : by the crew	0 38
" " " " by the contractor	0 74
Ballast trans-shipped by boats (each ship) per ton	0 37
Ballast trans-shipped board to board (each ship) per ton	0 28

Sanitary Dues.—Vessels from European ports, 10 c. per reg. ton; from other ports, 15 c. per reg. ton.

Quay Dues.—50 c. per reg. ton for vessels from European ports, and 1 fr. per reg. ton for vessels from other ports.

Chamber of Commerce Dues :—All vessels entering the port, 0.02 fr. per reg. ton. **Local Dues** :—Vessels carrying petroleum and methylated spirits, making use of the dams in the special basin: Entrance and clearance, 0.06 fr. per barrel; 0.42 fr. per ton in bulk. Entrance, 0.03 fr. per case or can. Clearance, 0.03 fr. per case or can of over 50 litres; 0.01 fr.

France—Cette (*continued*).

per case or can of 50 litres and under. General cargo, coming in or going out, 10 c. per ton or 11 c. per parcel.

Towage.—There is no fixed tariff; rates by agreement.

Labour.—8 fr. per day of 8 hours, and 1 fr. 50 c. for every additional hour. **Water** :—2s. 10d. per 1,000 litres, f.o.b.

Pro Forma Charges on a British steamer, of 1,500 reg. tons coming from Cardiff with 3,000 tons of coal, and leaving with 2,000 tons of cauzite, bound for Rotterdam :—

	Fr.	c.
Stamp	0	10
Pilotage, in and out, 3rd line day-time	210	00
Assistance boat, in and out, 2 boats 10 fr. per boat and per movement	40	00
Report at the registry, optional	10	00
Application at the Tribunal and stamped paper, optional	1	60
Examination fees for verifying stowage	18	60
Sanitary dues, 10 c. per reg. ton	150	00
Quayage and stamp, 50 c. per reg. ton	750	00
Passport	1	95
Brokerage, inwards, 3,000 tons at 20 c. per ton	600	00
1 stamp for bill of lading entering	1	20
Towage, 20 fr. per tugboat and per movement, 2 movements with 2 tugs	80	00
Brokerage, outwards, 2,000 tons at 20 c. per ton	400	00
Manifest	10	00
Pass bill	0	75
Custom House permit	3	00
Toll dues, 10 c. per man per day, 25 men and 12 days	30	00
Fresh water, 3 fr. 50 c. per 1,000 litres (50 tons)	175	00
Watchman for fires, 2 fr. 50 c. per day (12 days)	30	00
Salvage	2	00
Local toll dues, 2 c. per ton measurement	30	00

2,544 20 = £100 18s. 11d.

Pro Forma Charges on a steamer of 2,966.62 reg. tons, coming from Philadelphia with a cargo of 5,900 tons of petroleum, drawing 23 ft. 3 in. water :—

	Fr.	c.
Sanitary dues, 15 c. per net reg. ton	444	90
Quay dues, 1 fr. per net reg. ton	2,966	65
Custom House pass	2	20
Toll dues (Chamber of Commerce) 2 c. per reg. ton	59	45
Town dues at 6 days, 36 men at 10 c.	21	60
Pilotage, in and out 2d. line, 0.175 fr. net reg. ton	519	30
Custom House manifest	3	60
Clearance inward, 5,900 tons at 20 c. per ton	1,180	00
British Consul	3	20
Custom House report	3	50
Watchmen for fires on board, 6 days at 28.50	171	00
Towage, in and out	400	00
Boatmen, in and out and shifting	80	10
Water, 116 tons at 3 fr. 50 c. per 1,000 litres	406	10
Outward permit	2	75
Lifeboat society	5	00
Petroleum harbour dues at 42 c. per ton	2,478	00

8,747 35 = £347 1s. 2d.

Pro Forma Charges on a steamer of 2,532.22 net reg. tons, coming from New Orleans, with a full cargo of 5,396 tons of staves, drawing 23 ft. 4 in water :—

France—Cette (continued).

	Fr.	c.
Sanitary dues at 15 c. per net reg. ton	379	80
Quay dues at 1 fr. per net reg. ton	2,532	25
Custom House pass	2	20
Toll dues (Chamber of Commerce), 2 c. per net reg. ton	50	75
Town dues 20 days, 28 men at 10 c.	56	00
Pilotage, in and out, 1st line, 0.225 net reg. ton	569	80
Custom House manifest	3	60
Clearance inwards, 5,396 tons of staves at 20 c. per ton	1,079	20
Surveillance by Customs for overtime	50	10
British Consul	3	20
Custom House report	3	50
Watchmen for fires on board, 20 days at 2 fr. 50 c.	50	00
Towage, in and out and shifting	400	00
Boatmen, in, out, and shifting	50	10
Water, 3 fr. 50 c. per 1,000 litres, say, 100 tons	350	00
Outward permit	2	75
Life-boat society	5	00

5,588 25 = £221 14s. 6d.

CHERBOURG.

Cherbourg, in lat. 49°39' N., long. 1°38' W., is a naval station, extensive arsenal, and fortress, connected by railway with Paris on the one side and St. Malo and Brest on the other.

Population.—43,837.

Imports.—Coal, timber, cement, guano, wine, soda, gunpowder, etc.

Exports.—Butter, cattle, pigs, horses, poultry, eggs, vegetables, cut stone, etc.

Accommodation.—The roads, 1,250 acres in extent, are protected by a breakwater nearly 3 miles long, with good anchorage inside for the largest ships, and there being two entrances, E. and W., the roads are available as a refuge for ships in all weathers. The port is protected by an amphitheatre of hills, and is effectively lighted, as are the roads and entrances.

There is a tidal harbour with a water area of 15 acres. The width of the entrance between the jetties is 164 ft., and the length of available quayside 1,968 ft. The depth, at high-water springs, is 26 ft. There are 6 floating steam cranes (private), one of which, on rails on the western quayside, can lift 1½ ton, and another, on rails, on the eastern quayside, can lift 3 tons. **The Bassin du Commerce** has a water area of 13 acres. The dock is 1,311 ft. long and 650 ft. wide. The quayside available is 2,887 ft. long. The lock is 197 ft. long, 52 ft. wide at the entrance, and has 25 ft. on the sill at ordinary high springs.

Ordinary repairs to machinery and wooden hulls can be executed in the commercial dock, but the Government docks can be used by merchant vessels by special permission from the Minister of Marine. There is a slip 147 ft. long and 196 ft. wide, usually used for breaking up ships.

The following are the dry docks:—

Government No. 1	is 342 ft. long,	65 ft. wide at the entrance, and	29½ ft. on the sill.
" 2	" 374 " "	65 " " " "	29½ " " "
" 3	" 374 " "	65 " " " "	29½ " " "
" 4	" 342 " "	65 " " " "	29½ " " "
" 5	" 474 " "	96½ " " " "	36½ " " "
" 6	" 615 " "	65 " " " "	28 " " "
" 7	" 265 " "	81½ " " " "	17½ " " "
" 8	" 257½ " "	78½ " " " "	17½ " " "
Commercial	" 249 " "	45½ " " " "	18 " " "

Length given is "over all." Width at entrance is at "coping level." Depth on the sill is at high water ordinary springs.

France—Cherbourg (continued).

Steamers run every day, except Thursdays and Sundays, for goods to Southampton, three days weekly for passengers also, and once weekly to Guernsey and Alderney for passengers and goods. A direct communication is thereby maintained from Cherbourg with Southampton, Portsmouth, London, and the South of England, also with the Channel Islands.

Time Signals.—Chronometers can be checked. A disc is placed vertically 5 minutes before the signal on a mast on the Marine Observatory. The disc falls into a horizontal position at 10 h. 0 m. 0 s. a.m. Paris mean time, equal to 21 h. 50 m. 39 s. Greenwich mean time, and 21 h. 44 m. 8.7 s. local mean time.

Pilotage.—Inwards—Steamers: 11 c. per reg. ton. Sailers: 22 c. per reg. ton. Outwards—Steamers: $7\frac{1}{2}$ c. per reg. ton. Sailers: 15 c. per reg. ton loaded, and 10 c. per reg. ton, if in ballast. Pilotage inwards is augmented $12\frac{1}{2}$ per cent. if the pilot offers his services beyond 6 miles, and 25 per cent. if beyond 12 miles. This is payable whether his services are accepted or not; but if no pilot should present himself pilotage is not charged.

Port Charges.—For coastwise trade: **Town Dues**:—30 c. per reg. ton. **Quay Dues**:—50 c. per reg. ton. **Sanitary Dues**:—10 c. per reg. ton. For foreign trade: **Town Dues**:—30 c. per reg. ton. **Sanitary Dues**:—15 c. per reg. ton. **Quay Dues**:—1 fr. per reg. ton. Vessels in ballast do not pay quay dues.

Brokerage.—

Sailing vessels.—Entered in ballast, per reg. ton $12\frac{1}{2}$ c.; ditto cleared, nil.
 " Entered with full or part cargo, per ton of cargo 50 c.; " cleared, 25 c.
 Steamers.—Entered in ballast with passengers, per horse-power 25 c.; " cleared, $12\frac{1}{2}$ c.
 " Cleared in ballast without passengers, nil.
 " Entered with full or part cargo, per ton of cargo . 50 c.; .. cleared, 25 c.

Brokerage on coal inwards for all vessels is 40 c.

Pro Forma Charges on a steamer of 163 tons net register, entering Cherbourg coastwise with a cargo of 3,143 bags of artificial manure weighing 310 tons, and clearing with a cargo of macadamized stone:—

	Fr.	c.
Pilotage, inwards and outwards	30	15
Bridgemen	5	40
Harbour master	5	00
Permits, printed forms, and pettiés	3	60
Consular fee	3	15
Sanitary dues	16	30
Quay dues	81	50
Town dues and passport	50	95
Stamped bill of lading	1	20
Brokerage	155	00
Brokerage on outward cargo	77	50

429 75 = £17. 1s. 0d.

CONCARNEAU.

Concarneau is a small port in lat. $47^{\circ}53'$ N., long. $3^{\circ}56'$ W.

Population.—8,500.

Imports.—Salt, cod-fish roe, olive oil, arachide flour, coal, cement, timber, spars, and phosphate.

Exports.—Wood, fish, grain, apples, sardines, pit props, preserves, potatoes.

France—Concarneau (*continued*):

Accommodation.—Concarneau is a tidal harbour, and only suitable for small vessels. Vessels of 250 reg. tons can reach the quay on spring tides. The roadstead outside the piers is safe, deep, and has a good anchorage.

Pilotage.—As the entry is very intricate and dangerous, strangers should always employ a pilot.

Port Charges.—Harbour Dues:—50 c. per reg. ton. **Sanitary Dues:**—10 c. per reg. ton.

COURSEULLES.

Courseulles, in lat. $49^{\circ}20'$ N., long. $0^{\circ}28'$ W., is about 10 miles N.N.W. of Caen.

Population.—About 1,600.

Imports.—Coal and wood.

Exports.—Oilcake and oysters.

Accommodation.—Courseulles is a tidal port. At high water spring tides, vessels of 10 to 12 ft. can enter. Good quay accommodation is available. There is a wet dock 60 ft. long, 184 ft. wide, 34 ft. wide at the entrance, and $10\frac{1}{2}$ ft. on the sill at ordinary high water springs. At low water the dock is dry, unless the gates are closed. The port is also equipped with a careening slip, 459 ft. long and 115 ft. wide, at the entrance.

DAHOUET.

Dahouet, in lat. $48^{\circ}35'$ N., long. $2^{\circ}33'$ W., is about 10 miles N.E. of St. Brieuc.

Exports.—Grain and potatoes.

Accommodation.—This is a small tidal harbour. It is difficult to make, being hid by a high point of land. There are two buoys off the entrance, and two beacons just inside, one on each side. When inside there is good shelter. There is only 5 ft. of water at neap tides; spring tides, 17 ft. The harbour dries at low water. Vessels almost invariably enter in ballast. There is 755 ft. of quayage.

Pilotage.—Strangers should not attempt to enter without a pilot.

The expenses on a vessel of 22 reg. tons, ballast in, drawing 5 ft., and cargo out, weighing 8 ft., were only 16s. including pilotage, harbour dues, bill of health, etc.

DIEPPE.

Dieppe is in lat. $49^{\circ}55'$ N., long. $1^{\circ}5'$ E.

Population.—23,733.

Imports.—Coal, iron, timber, oil seeds, machinery, chemicals, etc.

Exports.—Manufactures, fruit, potatoes, flints, oilcake, cheese, wine, spirits, tissues, etc.

Accommodation.—There is good anchorage in the roads on chalk covered with sand; it is unsheltered from sea winds. At low tide the roads afford $19\frac{1}{2}$ ft. at a distance of 650 yards from the shore, and 26 ft. at a distance of 1,650 yards.

France—Dieppe (*continued*).

The entrance channel is 1,950 ft. long, 246 ft. wide, 36 ft. deep at ordinary springs, and 30 ft. at ordinary neaps.

Avant Port.—Area, $16\frac{1}{4}$ acres, 2,854 ft. of quayage, 29 to 36 ft. depth at ordinary high water springs. There is a crane to lift 10 tons; and seven cranes to lift $1\frac{1}{2}$ tons; all belonging to the London, Brighton, and South Coast Railway.

Arrière Port.—Area, 10 acres; length of quayage, 918 ft. The Arrière Port communicates with the Avant Port by the Pollet Channel, which affords about 18 in. less water than the entrance channel.

Bassin Duquesne (only used for fishing vessels).—Area, 5 acres; width of entrance, 54 ft.; depth on the sill at ordinary springs, 26 ft. There is a crane to lift 30 tons; three to lift 3 tons; two to lift $1\frac{1}{2}$ tons; and one to lift 5 tons; belonging to the Chamber of Commerce. Duquesne Dock communicates with the harbour.

Bassin Bérigny.—Width of the entrance, 46 ft.; depth on the sill at ordinary springs, $23\frac{1}{2}$ ft. There is one steam crane to lift 5 tons; two to lift 3 tons; and six to lift $1\frac{1}{2}$ tons; belonging to the Chamber of Commerce.

Half-Tide Dock.—Width of entrance, 59 ft.; depth on the sill at ordinary high springs, $33\frac{1}{2}$ ft. There are two steam cranes, to lift $1\frac{1}{2}$ and 5 tons respectively, belonging to the Chamber of Commerce.

New Dock.—Area, 12 acres; width of entrance, 59 ft.; depth on the sill at ordinary springs, 30 ft. There are four steam cranes, one to lift 3 tons, three to lift $1\frac{1}{2}$ tons, belonging to the Chamber of Commerce. The New Dock communicates with the Half-Tide Dock.

The berths alongside the quays of the town are composed of a mixture of mud and shingle, and their elevation is about 12 ft. above the level of the lowest tides. The berths alongside Le Pollet suburb are about the same height, but they are exposed to the surf when the sea is high at the entrance.

In Nouvel Avant Port is a Government dry dock 361 ft. long over all, $67\frac{1}{2}$ ft. wide, at high water ordinary spring level, at the entrance, and with a depth of 30 ft. on the sill, at ordinary high springs. There is a gridiron $198\frac{1}{2}$ ft. long and $37\frac{3}{4}$ ft. wide at the entrance. Important works are now being undertaken outside the port to improve the entrance.

Pilotage.—When the state of the sea is such as to prevent the pilots from boarding vessels in the offing, they remain on the jetty heads and direct them by signals. Those drawing less than 10 ft. can enter the channel two hours before high water in the harbour, and with a fresh leading wind they may run in two hours after high water; vessels of large draught are taken in by the pilots during the last hour of the flood. Inwards—Sailing vessels, 24 c. per register ton within 3 miles of the pier; 36 c. above 3 miles. Steamers pay half. Outwards—Sailing vessels, loaded 18 c. per register ton, in ballast 12 c.; steamers, 9 c. per register ton.

Port Charges.—Brokerage:—Sailing vessels or steamers entering in ballast, 20 c. per register ton; leaving, nil. Sailing vessels or steamers with cargo, 40 c. per ton; cargo leaving, 20 c. Steamers entering with coal, 15 c. per ton. Freights, half per cent. **Tonnage Dues:**—44 c. per net ton. **Towage:**—40 c. per reg. ton inwards, and 20 c. outwards. **Ballast:**—1 fr. to 1 fr. 50 c. per ton. Stevedores loading, as per contract; discharging coal, 1 fr. per ton. **Dock Dues:**—34 c. per register ton. **Quay and Sanitary Dues:** See **France**.

France—Dieppe (*continued*).

Pro Forma Charges on a steamer of 500 reg. tons, from the United Kingdom, with a cargo of 1,200 tons of coal, and ballast out :—

	Fr.	c.
Pilotage in, 90 fr. ; boat in, 18 fr.	108	00
Bridge men, 10 fr. ; signals, 6 fr. 50 c. ; lifeboat, 2 fr.	18	50
Sea pass, sanitary and quay dues	272	20
Dock dues	170	10
Pilotage out, 45 fr. ; boat out, 18 fr.	63	00
Customs permits and stamps	2	70
Stamp duty—bill of lading	1	20
Hire of gear, 25 fr. ; fire watch, 5 fr.	30	00
Sworn weigher : Weighing cargo (half fees), 48 fr. ; dock watch (half fees), 18 fr.	66	00
Discharging cargo as per charter, usually 1 fr. per 1,000 kilos.	1,219	00
Consular fees	3	20
Brokerage in, 1,200 tons at 15 c. per ton	180	00

2,133 90 = £84 13s. 4d.

DUNKIRK.

Dunkirk, in lat. 51°2' N., long. 2°22' E., is the most northerly seaport of France, 39 miles E.S.E. $\frac{1}{2}$ E. from Dover. Dunkirk ranks as the fourth commercial port of France.

Population.—38,287.

Imports.—Coal, nitrate, pig-iron, ore, timber, oils, grain seeds of all kinds, petroleum, wool, jute, flax, cotton, tow, etc.

Exports.—Coal, rails, slates, bottles, flour, bran, dried vegetables, potatoes, straw, hay, sugar, oilcake, yarn, oil, phosphate, machinery, etc.

Accommodation.—The roadstead, defended from the violence of the sea by sandbanks, is very good, and vessels may safely anchor in 8 to 12 fathoms of water. The tides in the roads run E. from about three hours before to three hours after high water time, and W. the rest of the time.

The entrance channel from the roadstead to the outer harbour is 3,113 ft. long ; 425 ft. wide between the jetties ; 27 ft. 7 in. deep at ordinary springs ; and 24 ft. 4 in. deep at ordinary neaps. The harbour is in two portions : the tidal harbour, which is 10 acres in extent, and the outer harbour, which is $7\frac{1}{2}$ acres in extent. The tidal harbour is 2,198 ft. long and the outer harbour 2,132 ft. The length of quayage in the tidal harbour is 2,950 ft ; the width of the entrance is 230 ft. ; the depth at ordinary springs is 26 ft. There are two jetties. There are four wet docks as follows :—

Bassin de Freycinet.—Water area, $55\frac{1}{2}$ acres ; length of quayage, $3\frac{1}{10}$ miles ; length of west lock, $383\frac{1}{2}$ ft. ; width of entrance, $68\frac{3}{4}$ ft. ; depth on the sill, 24 ft. 4 in. ; length of Trystram lock, 580 ft. 9 in. ; width of Trystram lock, 82 ft. 5 in. ; depth of water on the sill, at ordinary springs, 35 ft. 11 in. There is one floating crane to lift 40 tons and one to lift 10 tons ; 36 hydraulic cranes to lift from $\frac{3}{4}$ to 3 tons. One branch (No. 4) of the Bassin de Freycinet is reserved for ships laden with dangerous or inflammable cargoes.

Bassin de la Marine.—Water area, $7\frac{1}{2}$ acres ; length of quayage, 2,296 ft. ; length of dock, 915 ft. ; width, 361 ft. ; length of the marine lock (from the Bassin du Commerce), 164 ft. ; width of the marine lock, 52 ft. ; depth on the sill at ordinary springs, 20 ft 8 in. ; width of the Lock d'Amont (from Bassin de Freycinet), 68 ft. 10 in. ; depth of water on the sill at ordinary springs, 24 ft. 4 in. There are three hydraulic cranes to lift from $\frac{3}{4}$ to 2 tons.

France—Dunkirk (continued).

Bassin du Commerce.—Water area, $13\frac{1}{2}$ acres; length of quayage, 2,772 ft.; length of Lock de la Citadelle, 174 ft.; width, 43 ft.; length of Lock de Barrage, 164 ft.; width, 68 ft. 10 in.; depth of water on the sill at ordinary spring tides, 20 ft. 8 in.; length of the dock, 1,540 ft.; width, 310 ft. There are two hand cranes to lift from 5 to 30 tons.

Bassin de l'Arrière Port.—Water area, 6 acres; length of quayage, 1,706 ft.; length of the dock, 975 ft.; width, 325 ft. This dock is entered from Bassin du Commerce and has the same depth at the entrance.

Canal de l'Île Jeanty is 2,624 ft. long, 131 ft. wide, and connects the docks with the inland canals.

The dry docks, etc., are as follows:—

Government No. 1	is	366	ft. long,	$67\frac{1}{2}$	ft. wide at the entrance, and	$25\frac{1}{2}$	ft. on the sill.
"	"	2	"	366	"	$64\frac{1}{2}$	"
"	"	3	"	295	"	$64\frac{1}{2}$	"
"	"	4	"	625	"	$90\frac{1}{2}$	"

Patent slip with a lifting power of 1,000 tons, available for vessels 246 ft. long.

Gridiron 155 ft. long for vessels not exceeding 400 tons register.

Tides.—The direction and force of the wind greatly affects the tides; northerly and westerly winds bring more water than those blowing from the other quarters but when strong cause a heavy sea to run at the entrance to the piers.

The best anchorage is about a mile N.N.E. from the pier heads. The heaviest draught of water with which vessels enter the port at spring tides varies from 25 to 27 ft., and 22 to 24 ft. at neaps.

Tide Signals.—Day tidal signals are shown at the western pier head, those employed being a white flag with a blue cross and a blue pennant. When it is flood tide the blue pennant is hoisted over the flag with the blue cross, and vice versa when it is ebb tide. At high water the white flag with a blue cross is only shown. The flags indicating the flood tide are hoisted as soon as there is 6 ft. 7 in. of water above the low water spring mark at the entrance of the harbour, and those indicating the ebb tide are lowered when the water has fallen below this depth. Tide signals are made at night on the western pier head by flash lights exhibited from a small light-house specially erected. When, for any cause whatever, the entrance of the harbour is prohibited, a red flag is hoisted instead of the above signals in the day-time, and at night a red light, on each pier head. The following signals are also shown. For prohibiting ships to move in or out: Leughenaer Tower—day signal, red flag over green flag; night signal, red light over green light. Western Pier Head—day signal, green flag over red flag; night signal, red light over green light. Going out free, entrance prohibited: Western Pier Head and Leughenaer Tower—day signal, red flag; night signal, red light. Entrance free, going out prohibited: Northern Locks, Leughenaer Tower—day signal, green flag; night signal, green light.

Port Regulations.—Shipmasters are requested to have their ship's International Code signals hoisted when passing off Gravelines and on arriving in the roads. Their arrival is by these means reported to the harbour officer, ship agent, etc.

Captains are particularly requested to have a manifest of cargo made out as complete as possible, dated and signed, before entering the harbour; also a store list.

Lay-days for loading or discharging: Sailing vessels—under 300 net reg. tons, 8 days; from 301 to 500 net reg. tons, 9 days; from 501 to 700 net

France—Dunkirk (*continued*).

reg. tons, 10 days ; for every 250 tons or fraction thereof above 700 tons, 1 day. Steamers—Under 250 net reg. tons, 4 days ; from 250 to 500 net reg. tons, 5 days ; from 500 to 750 net reg. tons, 6 days ; from 750 to 1,000, 7 days ; for every 400 tons or fraction thereof above 1,000 tons, 1 day.

Time Signals.—Chronometers can be checked. A ball is hoisted on the staff of Leughenaer Tower 5 minutes before the signal. The ball is dropped at 10 h. 0 m. 0 s. Paris mean time, equal to 21 h. 50 m. 39 s. Greenwich mean time, and 22 h. 0 m. 10 s. local mean time. The signal is repeated 2 minutes after the first.

Pilotage.—The pilot-boat stations are : One between Dungeness and the Downs, one near the Dyck lightship, and the third near the Ruytingen lightship. **Sea pilotage** to Dunkirk roads (not compulsory):—From between Dungeness and Calais, sailers, 20 c. per reg. ton, steamers, 10 c. per reg. ton. From Calais, westward ; Ostend, eastward ; or Ruytingen, northward ; sailers, 10 c. per reg. ton ; steamers, 5 c. per reg. ton. **Harbour pilotage** (compulsory):—From or to the roads, loaded, sailers, 20 c. per reg. ton ; steamers, 10 c. per reg. ton ; from or to the roads, in ballast, sailers, 10 c. per reg. ton ; steamers, 10 c. per reg. ton. Pilotage is now compulsory on all foreign tugs, when towing in or out of Dunkirk, the tariff for which is one-third the pilotage of the ship towed. For docking, berthing, swinging, shifting, mooring, or unmooring a ship, the pilot is entitled (if not over 2 hours' work) to 5 fr. ; for every additional hour, or fraction thereof, 1 fr. Services at sea, in the roads, or harbour, between sunset and sunrise, 4 fr. For changing anchorage in the roads, or bringing a ship to anchor, outward bound, 6 fr. Pilot ordered for a ship in the dock or harbour and not employed, 3 fr. Pilot ordered for a ship in the roads and not employed, 6 fr. Sojourn on board, in quarantine or otherwise, 6 fr. per day. When the outward pilot goes further than the roads, he is to be paid, irrespective of distance money, the charge for his landing, 18 fr. The pilots are strictly forbidden to dock, undock, or move any ship unless the captain is on board.

Port Charges.—Harbour Dues:—80 c. per reg. ton. Vessels loading or discharging cargo which does not exceed in French freight tons one-fourth of the vessel's reg. tonnage, 32 c. per reg. ton ; vessels loading or discharging over one-fourth and not above one-half of the vessel's reg. tonnage, 48 c. per reg. ton ; vessels loading or discharging cargo over one-half and not above three-fourths of the vessel's reg. tonnage, 64 c. per reg. ton. **Lock Dues** (payable only when vessel enters the dock):—4 c. per reg. ton. **Quay Dues**:—Vessels loading or discharging cargo exceeding half of the ship's tonnage, 1 fr. per 1,000 kilos. ; equal to or less than half of the ship's reg. tonnage and over one-quarter, 50 c. per 1,000 kilos. ; equal to or less than one-quarter and over one-tenth, 25 c. per 1,000 kilos. ; equal to or less than one-tenth, 10 c. per 1,000 kilos. ; half the above dues are charged on vessels coming from or going to any port within the limits of the "Grand Cabotage." No quay dues are levied if they have already been paid at another French port. **Boatmen**:—For any job, such as docking, undocking, shifting in dock or in the harbour, hauling, swinging, berthing, mooring, unmooring, taking to sea, or landing from the roads, not exceeding 2 hours' work, 15 fr. ; for every additional hour or fraction of an hour, 3 fr. ; for taking a pilot to a ship in the roads, 12 fr. ; for attending on quarantine officials, 15 fr. At night,

France—Dunkirk (*continued*).

between sunset and sunrise, the above tariff is raised one-third. **Towage**:—Within a radius of one mile from the pier-head to or from the lock gates or outer basin:—Inwards, 20 c. per reg. ton; outwards, 15 c. per reg. ton. Over 1 mile and not exceeding 4 miles:—Inwards, 30 c.; outwards, 25 c. Over 4 miles and not exceeding 7 miles:—Inwards, 40 c.; outwards, 35 c. From lock gates into dock, or shifting in dock or basin: Inwards, 5 c.; outwards, 5 c.; from one dock to another, each dock traversed: Inwards, 5 c.; outwards, 5 c. (Maximum 10 c. per reg. ton.) Harbour towage, 10 c. per net reg. ton. **Assistance Boats**:—Assisting steam or sailing vessels from the roads to the lock gates, or vice versa—Vessels of 999 tons and under, 100 fr.; 1,000 to 1,499, 125 fr.; 1,500 to 1,999, 150 fr.; 2,000 to 2,999, 200 fr.; 3,000 and over, 300 fr. **Weighing Charges**:—Half the cost of weighing is chargeable to the ship when the freight is payable on the weight delivered.

Brokerage.—

	Per French Ton of Cargo delivered.		
	On first 600 Tons.	From 601 to 1,000 Tons.	On Balance of Cargo.
Inwards —			
Steamers entirely loaded (or over nine-tenths) with coal, iron ore, ice or pitch	15 c.	10 c.	5 c.
Sailing vessels entirely loaded (or over nine-tenths) with coal, iron ore, ice or pitch	30 c.	20 c.	10 c.
Steamers or sailing vessels entirely loaded (or over nine-tenths) with timber, dyewood, oak, iron, guano, or grain, such as wheat, maize, rye, barley, and oats	40 c.	30 c.	20 c.
Steamers or sailing vessels loaded with any other cargoes	50 c.	40 c.	25 c.
Steamers or sailing vessels in ballast or putting in with or without passengers	12½ c. per reg. ton.		
Outwards —			
Steamers or sailing vessels with whole or part cargo	25 c. per ton cargo.		
Sailing vessels in ballast with or without passengers	Free.		
Steamers in ballast without passengers	Free		
Steamers in ballast with passengers	6¼ c. per reg. ton.		
Chartering brokerage	2 per cent.		

Dock Charges.—

	Pumping Dock.		Dock Dues.	
	Per reg. Ton.	Per Day.	Per reg. Ton.	Per Day.
Nos. 2 and 4 Docks —	Fr. c.	Fr. c.	Fr. c.	Fr. c.
Vessels up to 1,000 tons { No. 2	—	275 00	—	80 00
{ No. 4	—	500 00	—	120 00
Every ton above 1,000 up to 3,000 tons	0 20	—	0 05	—
Every ton above 3,000 tons	0 10	—	0 03	—
No. 3 Dock —				
Vessels up to 300 tons.	—	120 00	—	40 00
Every ton above 300 tons.	0 20	—	0 05	—

Pro Forma Charges on a sailing vessel of 2,000 reg. tons, from Iquique with a cargo of 3,000 tons of nitrate inwards, and ballast out:—

	Fr. c.
Dunkirk inward pilotage from off Gravelines at 30 c. per ton.	600 00
Assistance boats, inwards	30 00
Pilot, for assistance in dock	10 00
Outward pilotage to the roads at 10 c. per ton	200 00
Assistance boats, outwards	30 00
Quay dues, permit, and stamp	2,002 20
Health dues	300 00

Carried forward 3,172 20

France—Dunkirk(continued).

	Fr.	c.
Brought forward	3,172	20
Harbour dues at 80 c. per reg. ton	1,600	00
Lock dues at 4 c. per reg. ton	80	00
Tax for sweeping quay	20	00
Police life-boat tax	40	00
Survey on hatches and stowage, about	70	00
Customs permits, prints, and petties	12	10
Stevedore's bill, viz., 3,000 tons, at 7½d. per ton	2,343	75
Half cost of weighing cargo, at 35 c. per reg. ton	525	00
Inward brokerage, as per tariff	960	00
Ballast, 300 tons, at 2 fr. 50 c. per ton	750	00

9,573 05 = £379 16s. 7d.

Pro Forma Charges on a steamer of 2,500 reg. tons, from the River Plate, with a cargo of 5,000 tons of maize inwards, and out in ballast :—

	Fr.	c.
Dunkirk inward pilotage from off Gravelines at 15 c. per ton	375	00
Assistance boats, inwards	30	00
Pilot, for assistance in dock	10	00
Outward pilotage to the roads, at 10 c. per ton	250	00
Assistance boats, outwards	30	00
Quay dues, permit and stamp	2,502	20
Health dues	375	00
Harbour dues at 80 c. per reg. ton	2,000	00
Lock dues at 4 c. per reg. ton	100	00
Tax for sweeping quay	25	00
Police and life-boat tax	50	00
Survey on hatches and stowage, about	80	00
Customs permits, prints, and petties	12	10
Fire watchman, viz., 8 nights at 4 fr. per night	32	00
Stevedore's bill, viz., 5,000 tons, at 6d. per ton	3,125	00
Half cost of weighing cargo at 25 c. per ton	625	00
Inward brokerage, as per tariff	1,160	00

10,781 30 = £427 14s. 5d.

Pro Forma Charges on a steamer of 2,000 reg. tons, from the Black Sea, with a cargo of 4,000 tons of wheat inwards, and ballast out :—

	Fr.	c.
Dunkirk inward pilotage from off Gravelines, 15 c. per ton	300	00
Assistance boats, inwards	30	00
Pilot, for assistance in dock	10	00
Outward pilotage to the roads, at 10 c. per ton	200	00
Assistance boats, outwards	30	00
Quay dues, permit, and stamp	1,002	20
Health dues	200	00
Harbour dues at 80 c. per reg. ton	1,600	00
Lock dues at 4 c. per reg. ton	80	00
Tax for sweeping quay	20	00
Police life-boat tax	40	00
Survey on hatches and stowage, about	60	00
Customs' permits, prints, and petties	12	10
Fire watchman, viz., 5 nights at 4 fr. per night	20	00
Stevedore's bill, viz., 4,000 tons at 3d. per ton	1,250	00
Half cost of weighing cargo at 25 c. per ton	500	00
Inward brokerage, as per tariff	960	00

6,314 30 = £250 10s. 8d.

ELBEUF.

Elbeuf, in lat. 49°17' N., long. 1°0' E., is situated on the left bank of the Seine, S.S.E. of Rouen, and between Fort St. Ouen and Pont de l'Arche. Only barges can proceed from Rouen to Elbeuf on account of the stone bridges.

Population.—About 20,500.

ERQUI.

Erqui, in lat. $48^{\circ}37'$ N., long. $2^{\circ}27'$ W., is a small open port about 2 miles E.N.E. of Dahouet.

Accommodation.—It is only suitable for small craft, which are beached and loaded at low water. Vessels are sheltered from N.N.W. round easterly to S., but exposed to westerly winds. The water rises from 8 to 9 metres ($26\frac{1}{2}$ to 30 ft.) at spring tides, and 4 to 5 metres (13 to $16\frac{1}{2}$ ft.) at neap tides; the bottom is smooth. There is a jetty in the northern angle of the bay, about $1\frac{1}{2}$ miles W. of the village of La Chaussée, which affords good shelter to small craft capable of taking the ground. The roadstead has good holding ground, and is completely sheltered from easterly winds, but it is prudent to leave on the approach of westerly winds.

Port Charges.—**Quay Dues:**—Vessels coming from European ports with cargo, 50 c. per reg. ton; from all ports outside Europe, 1 fr. per reg. ton. **Harbour Dues:**—20 c. per ton of goods, loaded, unloaded, or transhipped. **Passport:**—Foreign vessels only, 1 fr. 20 c.; stamp, 75 c. per vessel. **Medical Inspection:**—10 c. per reg. ton for all vessels coming from European ports; from ports outside Europe, 1 fr. per reg. ton; French vessels coming from the Mediterranean, 5 c. per reg. ton.

ÉTAPLES.

Étaples, in lat. $50^{\circ}32'$ N., long. $1^{\circ}37'$ E., is about 15 miles S. of Boulogne, on the N. bank of the river Canche, 4 miles from its mouth.

Population.—About 4,600.

Imports.—China clay, salt, and coal.

Accommodation.—This port is only suitable for strongly-built vessels of about $8\frac{1}{2}$ ft. draught. The depth of water alongside the quay is about 6 ft. at neap tides. The river can only be entered or left with a leading wind, and vessels grounding are in great danger. Flood ebb tides run very strongly, and the sand is washed away from the ends of the vessel, leaving her supported solely by the middle. The port is becoming less important every year owing to the drift sand at the mouth of the river.

Pilotage.—A fisherman is generally employed to conduct vessels to the entrance, where the regular pilots are stationed. As the sandbanks in the river are continually shifting a pilot is necessary.

Pro Forma Charges on a vessel of 69 reg. tons, cargo in and ballast out, drawing 9 ft. 9 in. loaded:—

	Fr.	c.
Pilotage inwards	34	50
Pilotage outwards	17	50
Clearing at customs	12	00
Town dues	10	00
Brokerage, 80 c. per ton:	55	20
Ballast, 1 fr. per ton, say 20 tons.	20	00

149 20 = £5 18s. 5d.

France.

EU.

(See **Tréport and Eu**, p. 192.)

FÉCAMP.

Fécamp, in lat. $49^{\circ}45' N.$, long. $0^{\circ}23' E.$, is about 24 miles N.E. of Havre.

Population.—16,000.

Imports.—Coal, coke, cement, timber, pitch-pine, wheat, rapeseed, tar, hemp, salt, etc.

Exports.—Oilcake, flints, plaster, etc.

Accommodation.—There are two roads where vessels may find good holding ground with deep water. There is no bar at the entrance, and the depth of water between the piers is always greater than that of the harbour. Vessels of any size can lie safely in the two tidal harbours on a deep and soft mud bottom. A railway runs alongside the quay. Two steam cranes are now being fitted on the quay of the new dock for discharging colliers, alongside the railway station. Steamers carrying from 5,000 to 6,000 tons, and large sailing vessels drawing 22 ft., have entered the docks. Fécamp is one of the best ports for quick dispatch in discharging wood and coal.

The entrance channel is 1,049 ft. long, 230 ft. wide, and $28\frac{1}{2}$ ft. deep at high spring tides. The old tidal harbour has 1,340 ft. of quayside, with a depth of $23\frac{1}{2}$ ft. alongside at high water springs. There is about 3 ft. more in the middle of the harbour.

Bassin Bérigny.—Length of dock, 1,243 ft.; breadth of dock, 305 ft.; length of quayside, 2,620 ft.; width of entrance of the lock, 54.2 ft.; depth at the entrance, at high water springs, 24 ft. There are four steam cranes capable of discharging 15 tons per hour each; one other crane to lift from 4 to 10 tons; one sheer legs.

New Dock.—Length, 490 ft.; width, 328 ft.; width of lock entrance, 59 ft.; length of quayside, 980 ft.; depth at high water spring tides, $26\frac{1}{2}$ ft.

Half-Tide Basin (used as a dock).—Length, 330 ft.; width, 230 ft.; breadth at entrance of the lock, 59 ft.; depth, at high water springs, 26 ft. Vessels drawing 15 ft. can enter the other docks through the half-tide basin, for six hours each tide.

New Tidal Harbour.—Length, 980 ft.; depth of water, high water springs, 25 ft.; length of wharf, 410 ft.

There is a gridiron 165 ft. long.

Pilotage.—Inwards: Sailing vessels, 1st distance under 3 miles, 20 c. per ton; 2nd distance above 3 miles and under 6 miles, 30 c. per ton; 3rd distance 6 miles and over, 40 c. per ton, with cargo; steamers loaded or in ballast or sailers in ballast pay half these rates. Outwards: 15 c. per ton for sailers or steamers loaded or in ballast. Foreign vessels not assimilated to French pay 50 per cent. more.

Port Charges.—Brokerage:—Sailing vessels entering in ballast, $12\frac{1}{2}$ c. per register ton; leaving, nil. Steamers entering in ballast, 25 c. per horse power; leaving, nil. Steamers or sailing vessels entering with cargo, 50 c. per ton. Steamers entering with coal, 25 c. per ton cargo; leaving with cargo, 25 c. per ton cargo. Freights, $\frac{1}{2}$ per cent.

France—Fécamp (*continued*).

Pro Forma Charges on a steamer of 2,000 register tons, from the Gulf of Mexico, with a full cargo of pitch-pine (1,200 standards):—

	Fr.	c.
Registering bill of lading at Customs	1	20
Pilotage in, according to distance—average distance	300	00
Help boat in, 12 fr. each	24	00
Pier masters	62	00
Bridgemen	16	00
Custom House dues : Government dues, 1 fr. ; sanitary dues, 15 c. per reg. ton	2,300	00
Dock dues : Chamber of Commerce dues, 70 c. per ton reg. and 5 c. per ton cargo	1,623	80
Passport and stamps	2	30
Brokerage on 1200 stds.	1,944	00
Pilotage out	300	00
Help boat out, 12 fr. each	24	00
Fire guardian	15	00
Sea-protect, if necessary, 11 fr. 70 c.		

6,612 30 = £262 8s. 2d.

Pro Forma Charges on a steamer of 400 register tons, from the Tyne, with a cargo of 700 tons of coal inwards, and ballast outwards :—

	Fr.	c.
Pilotage, in and out, average distance	120	00
Help boat, in and out	24	00
Pier master, bridgemen, etc.	24	00
Custom House dues : Government dues, 50 c. per ton from European ports ; and sanitary dues, 15 c. per reg. ton	260	00
Brokerage, 25 c. per ton	175	00
Fire guardian	12	00

615 00 = £24 8s. 0d.

GRANVILLE.

Granville is in lat. 48°50' N., long. 1°35' W.

Population.—About 12,000.

Accommodation.—The tidal harbour has a length of 2,200 ft. ; the depth at high water spring tides is 31½ ft., and at high water neaps 18½ ft. There are ten cranes to lift up to 5 tons, and nine staithes for shipping of coal to 25 tons per hour.

The Dock.—Length, 628 ft. ; width, 479 ft. ; length of quayage, 2,952 ft. ; length of lock, 246 ft. ; width of entrance, 54 ft. ; depth on the sill at ordinary springs, 29½ ft. ; neaps, 16½ ft.

The Basin.—Length, 441 ft. ; width, 312 ft. ; length of quayage, 1,312 ft. ; width of entrance, 39½ ft. ; depth of water on the sill at ordinary springs 22½ ft., neaps, 7 ft.

Both lock gates can be opened together when necessary to admit longer vessels.

There is a dry dock 216½ ft. long over all ; 47 ft. wide at the entrance, at high water ordinary springs level ; and 22¾ ft. on the sill at high water ordinary springs. There is a gridiron 101 ft. long by 27 ft. wide, and a heaving-down slip, 98 ft. long and 13 ft. wide. The harbour is partially dry at low water, but is well protected by a granite pier ; and as the bottom is soft mud, vessels having to wait a tide to get into dock do not strain on grounding. Captains of vessels drawing more than 14 ft. are advised to enter the harbour one hour before high water, in order to facilitate their entrance into dock. There is always 3 ft. more water at the entrance of the harbour than there is on the dock sill.

France—Granville (*continued*).

Granville is the terminus of the Chemin de Fer l'Ouest, and vessels can discharge their cargoes into railway trucks. Fire is allowed on board in winter from 7 a.m. to 6 p.m. and in summer from 5 a.m. to 8 p.m.

Pilotage.—

		1st Distance.	2nd Distance.	3rd Distance.
		£ s. d.	£ s. d.	£ s. d.
Sailing vessels under 80 reg. tons (optional)		0 8 0	0 10 0	0 14 7½
From 80 to 99 reg. tons (optional)		0 12 0	0 14 6½	1 0 8½
" 100 " 149 " "		0 14 0	0 17 6	1 5 2½
" 150 " 199 " "		0 17 0	1 1 3	1 10 7½
" 200 " 249 " "		1 1 0	1 6 3	1 17 1
" 250 " 299 " "		1 4 0	1 10 0	2 3 2½
" 300 " 349 " "		1 7 6½	1 14 0	2 9 6½
" 350 " 399 " "		1 14 6½	2 3 0	3 2 1½
For vessels of heavier tonnage, per extra reg. ton		¾d.	¾d.	1½d.

Pilots kept on board until vessels enter the docks are entitled to 3s. 3d. extra. Help boat (optional), the charge is according to the number of workmen, and day or night services. Pilotage from Cape Fréhel to the third distance is optional, but when it takes place the rate is 1½d. per reg. ton. Steamers pay half pilotage charged to sailing vessels of the same tonnage. Steamers under 150 reg. tons are not liable.

Port Charges.—Quay Dues:—On vessels coming from European ports, 50 c. per reg. ton; from other ports, 1 fr. per reg. ton. **Sanitary Dues:**—On vessels coming from European ports, 10 c. per reg. ton; from other ports, 15 c. per reg. ton. **Salvage Duty:**—1d. per reg. ton. **Dock Dues:**—Entering or leaving the dock, day tides 3 c. per reg. ton up to 100 reg. tons, and 2 c. for every additional reg. ton; night tides, 6 c. per reg. ton. **Dry Dock Charges:**—First day, up to 100 reg. tons, 24s.; each following day, 12s. For each reg. ton above 100 reg. tons up to 300, the first and each following day, 1½d. For each reg. ton above 300 reg. tons, the first and each following day, ⅓d. **Ballast:**—1s. 0½d. per 1,000 kilos. **Water:**—44 gallons, 6d.; 88 gallons, 10d.; 132 gallons, 1s. 3d.; 176 gallons, 1s. 8d.; 220 gallons, 1s. 10d. **Steam Crane:**—Use of, 30 c. per 1,000 kilos. for coal, manure, phosphates, ore, and other goods of the same sort; 60 c. per 1,000 kilos. for other kinds of goods. Minimum 19s. 8d. per crane per day. **Brokerage:**—25 c. per delivered ton from European ports; 50 c. per ton from other ports for the first 800 tons, and 25 c. for remainder.

Pro Forma Charges on a steamer of 1,360 tons net reg. with cargo of 2,657 tons cargo, in from America, ballast out:—

	Fr.	c.
Pilotage in and out	202	50
Harbour dues (night tide)	81	60
Quay dues	1,360	00
Sanitary dues	204	00
Chamber of Commerce dues	136	00
Passport	1	95
Brokerage	874	25

2,860 30 = £113 9s. 9d.

France.**GRAVELINES.**

Gravelines, in lat. $50^{\circ}59'$ N., long. $2^{\circ}7'$ E., is about 12 miles W.S.W. of Dunkirk.

Population.—About 7,500.

Imports.—Props, pulpwood, pitch, china clay, general merchandise coal, bricks, etc.

Exports.—Plaster, gypsum, bottles, sand, phosphates, slates, straw, flints, etc.

Accommodation.—Gravelines has a tidal harbour, with an area of 75 acres, accessible to vessels of about 18 ft. draught at spring tides and 16 at neaps. At low water vessels lie aground in the harbour, on a bottom of muddy sand. There is 975 ft. of quayage. With an off-shore wind, vessels must be towed in by tugs, or rowing-boats, as a line of banks which are the prolongation of those of Dunkirk forms the roadstead. There is a small wet dock here, belonging to the Government, which will accommodate vessels not exceeding a breadth of 30 ft., and drawing 18 ft. at ordinary springs, and 16 ft. at ordinary neaps. The water area of this dock is 6 acres and the length 1,968 ft. The lock is 261 ft. long, and there is 1,968 ft. of quayage. There is a canal between Gravelines and the sea about 1 mile 3 fur. in length, available for vessels 250 ft. long, 30 ft. beam, and drawing 50 ft. There is a gridiron 65 ft. long. Steamship communication with London.

Pilotage.—28 c. per reg. ton. If a pilot is detained on board he is paid 3 fr. per day, with food.

Port Charges.—**Harbour Dues** :—70 c. per reg. ton. **Navigation Dues** :—50 c. per reg. ton. **Health Dues** :—10 c. per reg. ton.

Pro Forma Charges, on a steamer of 400 reg. tons, cargo in and ballast out, drawing 14 ft. loaded :—

	Fr.	c.
Harbour dues, 70 c. per reg. ton	280	00
Brokerage, 60 c. per reg. ton	240	00
Pilotage, in and out, 28 c. per reg. ton	112	00
Passport	2	00
Assistance boats, in and out	24	00
Navigation dues, 50 c. per ton	200	00
Health dues, 10 c. per ton	40	00
Fireguard, for, say, 4 days and 4 nights.	27	20

925 20 = £36 14s. 2d.

No extra charges are made when steamers are loaded outwards.

HARFLEUR.

Harfleur, in lat. $49^{\circ}30'$ N., long. $0^{\circ}12'$ E., is situated on the river Lezarde, near the mouth of the Seine, and about 4 miles from Havre.

Accommodation.—There is a canal between Havre and Harfleur, the depth being $16\frac{1}{2}$ ft.; and between Harfleur and Tancarville the depth is $11\frac{1}{2}$ ft. In the dry seasons the depths are likely to be less. Sea-going vessels must not exceed 46 ft. beam.

France—Harfleur (*continued*).

Pro Forma Charges on a vessel of 210²/₁₀ tons, from England :—

	Fr.	c.	Fr.	c.
Health dues			21	00
Opening of bridges, inwards			10	00
Pilotage in			41	65
Custom House :—				
Salvage dues	10	51		
Chamber of Commerce dues	21	13		
Quay dues	105	11		
Clearance and stamps	2	20		
			138	95
Pilotage, out			13	95
Help boat, out			13	00
Opening of bridges, outwards			10	00
Consul's fees, endorsing articles			3	20
Stamps, printing, petty expenses			5	00
Pilotage, from Havre to Harfleur			21	00
" " Harfleur to Havre			21	00
Boat, running lines in the docks, in and out			40	00
			338	75 = £13 8s. 10d.

HAVRE.

Havre, in lat. 49°29' N., long. 0°8' E., is situated on the northern bank, and at the mouth of the river Seine.

Population.—132,430.

Imports.—Raw cotton, coffee, grain, flour, coal, cocoa, petroleum, wine, spirits, hides, animal and vegetable oils, tobacco, rice, etc.

Exports.—Chemicals, coal, coffee, cocoa, raw cotton, grain, flour, raw hides, medicinal compounds, paper, pottery, glass, seeds, spirits, wines, sugar, tissues, tools, implements, dyewood extracts, etc.

Accommodation.—Havre is the largest of the French ports in the English Channel, and the only one capable of accommodating the large Transatlantic steamers.

There is slack-water for a period of about three hours, so that vessels arriving in the roads at tide time, and one or two hours afterwards, can enter the port and generally be docked; even a vessel drawing 5 metres (16½ ft.) of water may dock two hours and a half and sometimes three hours after high water, by going through the half-tide basin.

The entrance of the port is open to the N.W., the sea runs very heavy there whenever it blows hard from the westward. A lighthouse is erected on the north pier-head, the light of which can be seen for 10 miles. There is a flagstaff on the N. pier, from which the harbour signals are made, whilst the height of water in the harbour is signalled from a semaphore, with a mast and yard, situated on the old outer harbour.

The new outer harbour is now in use. The N. breakwater is 2,780 ft. long, and the S. breakwater is finished for a length of 2,200 ft. The width of the new entrance is 655 ft. A new N. jetty, 765 ft. long, has replaced the old one at the entrance of the tidal harbour. The S.E. jetty in the tidal harbour is in course of demolition, and will be replaced by quays, which are now being built. The following are the chief wet docks :—

New Tidal Harbour.—Depth at the entrance at ordinary springs, high water 40 ft.; low water 16½ ft.; length of harbour about 6,000 ft.; width (mean) of harbour about 1,000 ft.; length of quayage in the tidal harbour 5,118 ft., available, 4,364 ft. In the central channel and quay,

France—Havre (*continued*).

reserved for tugs the depth of water at ordinary high springs is, channel, $35\frac{1}{2}$ ft.; quays, 30 ft.; and at low ordinary springs, channel, 12 ft.; quays, $6\frac{1}{2}$ ft. The quays, except as stated above, and a large part of the harbour are dry at low water. There are 6 cranes to lift up to 3 tons.

Bassin du Roi (entered from the tidal harbour).—Length of the dock, 525 ft.; width (mean), 237 ft.; length of quayage (total), 1,345 ft., available 1,312 ft.; width of the entrance, $52\frac{1}{2}$ ft.; depth on the sill, at ordinary springs, $21\frac{1}{2}$ ft.

Bassin du Commerce (entered from Bassins du Roi and de la Barre).—Length of dock, 1,800 ft.; width (mean), 315 ft.; length of quayage (total), 4,134 ft., available, 4,052 ft.; width of entrance, 45 ft.; depth on the sill, at ordinary springs, $20\frac{1}{2}$ ft.

Bassin de la Barre (entered from the tidal harbour).—Length of the dock, 1,480 ft.; width (mean), 540 ft.; length of quayage (total), 3,872 ft., available, 3,609 ft.; width of entrance, 45 ft.; depth on the sill, at ordinary springs, 23 ft. There is a crane to lift 10 tons.

Bassin Vauban (entered from Bassins de la Barre and de L'Eure).—Length of the dock, 2,680 ft.; width (mean), 328 ft.; length of quayage (total), 5,009 ft., available, 4,700 ft.; width of entrances, $39\frac{1}{2}$ and $52\frac{1}{2}$ ft.; depth on the sill, at ordinary springs, $20\frac{1}{2}$ ft. There are 11 movable electric cranes to lift $1\frac{1}{2}$ tons each; 3 movable steam cranes to lift $1\frac{1}{2}$ tons each.

Bassin de la Citadelle (entered from the tidal harbour).—Length of docks, (N.) 1,115 ft., (S.) 690 ft.; width (mean), (N.) 361 ft., (S.) 263 ft.; length of quayage (total), 4,331 ft., available, 3,821 ft.; length of the lock, 203 ft.; width of the entrance, outer end 53 ft., inner end $52\frac{1}{2}$ ft.; depth of water on the sill, at ordinary springs, outer end $30\frac{1}{2}$ ft., inner end $25\frac{1}{2}$ ft. There is a hand crane to lift 10 tons.

Bassin de L'Eure (entered from Bassin de la Citadelle and the tidal harbour).—Length of dock, 3,083 ft.; width (mean), 919 ft.; length of quayage (total), 6,726 ft., available, 6,365 ft.; depth in the dock, at ordinary springs, $31\frac{1}{2}$ ft.; width at entrances, 100 and $98\frac{1}{2}$ ft.; depth on the sill, at ordinary springs, 35 and $40\frac{1}{2}$ ft. There is one steam sheer legs to lift 70 tons; one floating steam sheer legs to lift 30 tons; 6 floating steam cranes to lift $1\frac{1}{2}$ tons each; 3 floating steam cranes to lift 5 tons each (for coal).

Bassin Dock (entered from Bassin de L'Eure).—Length of dock, 1,821 ft.; width (mean), 263 ft.; length of quayage (total), 4,068 ft., available, 3,872 ft.; width of entrance, $52\frac{1}{2}$ ft.; depth on the sill, at ordinary springs, $27\frac{1}{2}$ ft. There are 4 small hydraulic cranes.

Bassin Bellot (entered from Bassin de L'Eure).—The dock is divided into two parts. Length of the two parts, 1,443 ft. and 1,657 ft.; width (mean), 722 ft.; length of quayage (total), 8,659 ft., available, 7,808 ft.; width of entrance, $98\frac{1}{2}$ ft.; depth on the sill, at ordinary springs, $34\frac{1}{2}$ ft. There are 14 movable electric cranes to lift $1\frac{1}{2}$ tons each; 28 hydraulic cranes to lift $1\frac{1}{4}$ tons each; 2 others to lift 3 tons each; 2 movable hydraulic cranes to lift 3 tons each; 1 floating steam crane to lift 4 tons (with pumps of 350 tons per hour); 1 floating steam crane to lift 10 tons (with pumps of 1,200 tons per hour); 6 floating steam cranes to lift $1\frac{1}{4}$ tons; one hand crane to lift 10 tons; hydraulic sheer legs to lift 120 tons.

Bassin au Pétrolé (entered from Bassin Bellot).—Length of dock, 754 ft.; width of dock, 230 ft.; depth on the sill, at ordinary springs, $30\frac{1}{2}$ ft.; width of entrance, $55\frac{1}{2}$ ft.

France—Havre (continued).

The following are the dry docks :—

No. 1	is	234	feet	long,	36	feet	wide	at	the	entrance,	and	18½	feet	on	the	sill.
" 2	"	220	"	"	"	42½	"	"	"	"	"	"	19½	"	"	"
" 3	"	272	"	"	"	52½	"	"	"	"	"	"	21½	"	"	"
" 4	"	656	"	"	"	99	"	"	"	"	"	"	29½	"	"	"
" 5	"	537	"	"	"	66	"	"	"	"	"	"	28	"	"	"
" 6	"	416	"	"	"	53	"	"	"	"	"	"	25½	"	"	"

The length given is "over all"; width at high water ordinary springs level; and depth on the sill at high water ordinary springs. There are three pontoons, with a collective lifting power of 1,200 tons. Shipbuilding is carried on and there is every facility for repairs.

Vessels are directed into the several docks as their size, depth of water, and description of cargo may require. Steamers laden with coal are generally ordered to Vauban Dock; and those laden with petroleum, oil, or naphtha, are specially berthed in Petroleum Dock. Any vessels coming with a cargo consisting of goods, the whole or half of which is entered by the receivers for the bonded warehouses, are bound to discharge such cargo in the Government Dock, paying all expenses incurred thereby, according to a regular tariff.

New Port Works.—The carrying out of the 1905 programme for the enlargement and improvement of the port is slowly progressing, especially in the case of the tidal lock, which is to give access to the docks from the outer harbour, and the final adjustments to the dock gates, etc. The tidal wharf, which will permit the largest passenger vessels to lie alongside at all tides, can now be considered in a fair way to completion; the only remaining obstacle, the old South Pier, will shortly have vanished and the dredging operations will then commence to allow a depth of 29½ ft. below datum at all tides. This depth can at any time be increased to 36 ft. below datum. The breakwater on the S. side of the outer harbour is also nearing completion, and the north-western approach, which was formerly 16 ft. below datum, will now be dredged to 19½ ft. The construction of the dock between the Bellot Dock and the Tancarville Canal is progressing favourably, and will, it is hoped, be completed by the end of 1909. The shed to be built on the S. bank, which is known as the Quai de la Garonne, is to cover a total space of 75,776 square metres (814,592 sq. ft.). A very powerful marine dredger has been ordered for this port in order to carry out the dredging operations.

Harbour Regulations.—Vessels going in and out must hoist their national flag, and while lying in the basin or docks they are to have the lower yards cock-billed, sails clewed up, jibboom and martingales rigged in, and anchors taken in.

The harbour-master, on application, designates a proper berth, and gives necessary directions for hauling in or out of the docks.

Vessels must have on board ship-keepers, or persons competent to take care of them; and if any vessel is required to move, and there is nobody on board, the harbour-master may have her removed at the expense and risk of master, owners or consignees.

No ballast or other heavy matter is to be thrown overboard in the basin or docks; and whenever tiles, bricks, coal, and ballast are taken in, landed, or transhipped, a tarpaulin must be spread between the vessel and wharf, or lighter, to prevent the same from falling into the water.

The wharf alongside must be swept nightly as far as the fastening posts.

France—Havre (*continued*).

No gunpowder is allowed to remain on board, but must be landed on arrival, and deposited in a proper warehouse. No pitch, tar, or other combustibles are to be heated on board, but in such places as the harbour-master may direct.

Smoking is expressly prohibited in any part of the vessel, deck excepted.

Fire or lights are allowed on board steamers, but subject to the harbour-master's control; as regards sailing vessels, such permission is only granted when they are lying alongside a quay, where there is no building abreast.

Lay-days.—The time allowed for the loading and discharging of vessels, according to their register tonnage, is *fixed by Government* as follows:—

STEAMERS.

Register tonnage.		Discharging.		Loading.	
From	Up to	3 working days		3 working days	
301 tons	500	5	"	5	"
" 501	750	6	"	7	"
" 751	1,000	7	"	9	"
" 1,001	1,250	8	"	10	"
" 1,251	1,500	9	"	11	"
" 1,501	1,750	11	"	12	"
" 1,751	2,000	12	"	13	"

SAILING VESSELS.

From	Up to	6 working days		10 working days	
301 tons	500	8	"	15	"
" 501	750	10	"	17	"
" 751	1,000	12	"	20	"
" 1,001	1,250	14	"	20	"
" 1,251	1,500	15	"	20	"
" 1,501	1,750	17	"	25	"
" 1,751	2,000	19	"	25	"

Above 2,000 tons the maximum will be increased by *one day* per 250 tons register for steamers, and per 150 tons for sailing vessels.

Customs.—Masters of vessels, whether bound to Havre or wind-bound, must be particular in having a manifest of cargo made up and signed by them before arrival, as the Custom House officers are entitled to ask for it within fifteen miles off the coast; and any master not being able to hand them such manifest when required may be liable to a penalty of 1,000 fr. and to the payment of a sum equal to the value of the cargo.

Any vessel must be reported at the Custom House within 24 hours after arrival. All the tobacco, snuff, cigars (loose or in boxes), as well as all dutiable provisions, are to be declared as exactly as possible; and any quantity of tobacco, snuff, and cigars is to be exhibited to the Custom House officers when they come to search the vessel. After such exhibition, if any tobacco be found on board, it shall be seized, and the master condemned to pay a fine which may be as high as 500 fr.

Bill of Health.—Masters of vessels from any foreign ports calling at Queenstown, Falmouth, or any other places in the United Kingdom, or on the continent for orders, must keep their original bill of health till they reach their final port of discharge, the French Consul at the port of call having but to affix a visa to it; otherwise they may be liable to three days' quarantine, as a bill of health issued at the port of call, even legalized by the French Consul, will stand void.

Pilotage.—Inwards:—The pilots are numerous and skilful, and their remuneration is proportionate to the distance over which their services extend. According to their regulation, the greatest distance is included between

France—Havre (*continued*).

Capes Barfleur and Antifer, and the shortest one is outside the banks lying off the harbour; but as there is great competition amongst them, they are provided with fast-sailing cutters, in which they go to meet vessels farther up and down the English Channel. The rates of pilotage for sailing vessels loaded and bound to Havre are as follows:—(1) ordinary pilotage (26 fr. per 100 tons register) within 20 miles off Cape La Heve; (2) one-third more beyond 20 miles, and within 40 miles; (3) one-half more beyond 40 miles; (4) one-half of ordinary pilotage in the Inner Roads; and (5) one-third of the same inside the Piers. Vessels in ballast bound to Havre, and wind-bound vessels either in ballast or loaded, are charged with one-half of ordinary pilotage; but in case they should be subject to any distance money, they pay it according to the above rates. Steamers are always considered as loaded vessels, but they pay only one-half of the pilotage rates stipulated for sailing vessels of the same register tonnage. Vessels under 80 tons are exempt from pilotage, unless they ask for a pilot. Any pilot coming within hail of a vessel is entitled to claim his pilotage, even if the captain refuses his services, whatever the distance may be. Any pilot boarding a vessel must not fail to point out to the captain the distance at which she is boarded, and in case of any dispute arising the case is to be submitted to the proper authorities. Captains are notified to mention in miles, on the pilot's order, the distance when they are boarded, and to state whether they are attended by help-boats into the lock, or into the basin only.

Outwards.—When piloting vessels out of the harbour, the pilots are bound to take them down to the Small Road, and they are paid—(1) one-half of the inward ordinary pilotage, if the vessel is fully or partly loaded; and (2) one-third of the same, if she is in ballast or wind-bound. Should the pilots be required to go as far as the outlying banks, they receive an additional sum of 3 fr.; and should they consent to take vessels farther, then their fees are to be fixed by mutual agreement. An allowance of $1\frac{1}{2}$ per cent. is charged upon all pilotage rates, on behalf of the head pilot.

Port Charges.—Tonnage Dues:—(i) Vessels navigating to or from a port situated beyond Europe and the Mediterranean Sea, 40 c. per reg. ton.

(ii) Vessels navigating to or from a European port, or an African or Asiatic port on the Mediterranean Sea, 30 c. per reg. ton.

(iii) Vessels with full or in a proportion of more than nine-tenths cargo of cereals (wheat, barley, oats, maize, and rye), wood manure, coal, iron ores, ice, or mineral tar, 20 c. per reg. ton.

The dues fixed under sections (i) and (ii) are reduced:—

By 30 per cent. for vessels belonging to a regular shipping line having at least one departure monthly;

By 40 per cent. for vessels belonging to a regular line having at least one departure weekly;

By 30 per cent. for vessels not belonging to a regular line and whose total operations of loading and unloading, expressed in freight tons, correspond in number to at least two-thirds of their legal tonnage.

The dues established under sections (i), (ii), and (iii), are, moreover, reduced by 50 per cent. for ships making for Harfleur by the Tancarville Canal.

For every vessel touching at Havre, either after having left or before

France—Havre (*continued*).

taking into a new French port, where a local tonnage due is established, part of its cargo coming from a foreign port, or in order to continue at Havre for a foreign destination its loading commenced in another French port where a tonnage due is established, the dues levied may not exceed :—

15 c. per reg. ton in the case provided for in section (iii).

275 millimes. per reg. ton in the cases provided for in sections (i) and (ii).

The following classes of vessel are exempt from payment of any tonnage dues :—Vessels belonging to the Government or engaged in its service ; vessels simply effecting at Havre a coasting operation reserved to the national flag ; French towing or pilot vessels ; vessels or boats engaged in coast fishing or navigating inland ; vessels putting into port through stress of weather or accident ; and, in general, those which do not effect any commercial operation.

Brokerage.—On vessels trading with foreign ports and French colonies :—

	Per 1,000 Kilos. of Cargo delivered.*		
	On the first 600 Kilos.	From 601 to 1,000 Kilos.	On Balance of Cargo.
	Centimes.	Centimes.	Centimes.
Inwards—			
Steamers entirely loaded (or over nine-tenths) with coal, iron ore, or ice	15	10	5
Sailing vessels entirely loaded (or over nine-tenths) with coal, iron ore, or ice	30	20	10
Steamers or sailing vessels entirely loaded (or over nine-tenths) with lumber, dyewood, oak, iron, guano or grains, such as wheat, maize, rye, barley, and <i>oats</i>	40	30	20
Steamers or sailing vessels loaded with any other goods	50	40	25
Steamers or sailing vessels in ballast or putting in with or without passengers †	12½ c. per ton register.		
Outwards—			
Steamers or sailing vessels with a whole or part cargo	25 c. per ton cargo.		
Sailing vessels in ballast with or without passengers	Nil.		
Steamers { in ballast without passengers	Nil.		
" with passengers			
Chartering commission, 2 per cent.	6½ c. per ton register.		

NOTE.—One-half in addition to the above rate to be charged as extra fees for oral interpretation, when foreign vessels might be no longer assimilated to French by their treaties.

(*) The *Ton Cargo* is calculated according to the scale of tonnage passed by the Havre Chamber of Commerce, with the exception of the *oats*, which will be reckoned at the rate of 900 kilogrammes to a ton.

(†) Should a vessel not have applied to the broker *inwards*, brokerage fees for *clearing on ballast* shall be the same as for vessels entering on ballast.

Any vessel having to put back shall be free of brokerage fees, if she has, on the same voyage, applied to a broker.

Brokerage fees on any vessel, loaded (either sailing or steam vessels) cannot be less than those due by the same vessels in ballast.

Salvage Tax (levied by Custom House on behalf of the Chamber of Commerce) :—

	Per register ton with 20 p.c. extra.	Fr. c.
French vessels in the coasting trade—exempt		
" from the Mediterranean or French ports	0	2½
" in the Colonial, Baltic, or foreign trade	0	5
Foreign vessels coming from anywhere	0	5

France—Havre (continued).

Wharfage or Quay Dues.—

	Per register ton.
	Fr. c.
Vessels with cargo from any places in Europe, or from the Mediterranean Sea (between Gibraltar and the Black Sea, both inclusive)	0 50
Vessels with cargo from any other places	1 00
„ coming in ballast, or putting in by stress of weather, are exempt from the same.	

Sanitary Dues.—10 c. per reg. ton on vessels from European ports, 15 c. per reg. ton from ports outside Europe.

Tariff of Dry Docks.—

	Fr. c.
<i>Dry Docks in Citadel Dock.—Draining of any of the three Dry Docks:—</i>	
1. Under and up to 100 tons	89-00
2. For every ton above 100	0-178
<i>Occupation of one of the Dry Docks for every day after draining:—</i>	
3. Under and up to 100 tons	22-25
4. For every ton above 100	0-044
5. Draining of one of the Dry Docks for preparing a cradle or special blocks, whatever may be the tonnage of the ship.	71-20
6. For every day's occupation after the drainage	17-80
<i>Dry Dock in the Black Sea Dock.—Draining of the Dry Dock:—</i>	
7. Under and up to 1,000 tons	356-00
8. For every ton above 1,000 and up to 3,000 tons	0-178
9. For every ton above 3,000	0-089
<i>Occupation of a Dry Dock for every day after the drainage:—</i>	
10. Under and up to 1,000 tons	89-00
11. For every ton above 1,000 and up to 3,000 tons	0-044
12. For every ton above 3,000	0-022
13. Draining of a Dry Dock for preparing a cradle or special blocks, whatever may be the tonnage of the ship	311-50
14. For every day's occupation after the drainage	71-20

Captains should note that booking fees which are payable are forfeited if the ship cannot wait her turn.

Lighting of the Dry Docks.—

15. Owners, consignees, and captains will be authorized, on their demand, to work during the night in caulking or repairing their ships; the lessee should be obliged to give sufficient light to the dry docks by electric light, so that the work may be carried on without trouble or difficulty. Should any dispute arise, the engineers will give a final decision.

To indemnify the lessee in that respect, the rates—Nos. 3, 4, 6, 10, 11, 12, and 14 of the tariff—will be higher by 25 per cent. from sunset to midnight, and again by 25 per cent. from midnight to sunrise; every period once commenced being wholly reckoned, and the indemnity due to the contractor not to be less than twenty francs (20 fr.) for every period.

It is further stipulated that a delay of six months, from the day when the approbation of the contract is notified, is allowed to the lessee for fitting up his apparatus.

NOTE.—Additional charges are made for shifting or cutting shores, repairing blocks, hire of gangway ladders, wooden horses, and hanging stages.

Pro Forma Charges on a British steamer of 2,000 tons, with cargo of (say) 4,000 tons coal in, ballast out:—

	Fr.	c.
Board of Health	200	00
Opening of bridges, inwards	40	20
Pilotage in	396	00
Pilot on board	3	00
Help boat in	36	00
Custom House:—	Fr.	c.
Salvage dues	120	00
Tonnage dues	400	00
Quay dues	1,000	00
Clearance and stamps	2	20
	1,522	20
Pilotage out	132	00
Pilot on board	6	00
Help boat out	48	00
Opening of bridges, outwards	40	20
Consul's fees endorsing articles	3	20
Sweeping the quay	12	00
Landing and re-shipping gunpowder and rockets	24	00
Advertisements	1	50
Stamps, printing, petty expenses	5	00
Brokerage (4,000 tons coal)	280	00

2,749 30 = £109 1s. 8d.

France—Havre (*continued*).

Pro Forma Charges on a British steamer of 2,000 tons, with a cargo of (say) 3,500 tons general merchandise in, ballast out :—

	Fr.	c.
Board of Health	200	00
Opening of bridges, inwards	40	20
Pilotage in	396	00
Pilot on board	3	00
Help boat in	36	00
Custom House :—	Fr.	c.
Salvage dues	120	00
Tonnage dues	600	00
Quay dues	1000	00
Clearance and stamps	2	20
	1,722	20
Pilotage out	132	00
Pilot on board	6	00
Help boat out	48	00
Opening of bridges, outwards	40	20
Consul's fees endorsing articles	3	20
Sweeping the quay	12	00
Landing and re-shipping gunpowder and rockets	24	00
Advertisements	1	50
Stamps, printing, and petty expenses	12	00
Brokerage, 3,500 tons general merchandise	1,085	00

3,761 30 = £149 4s. 9d.

Pro Forma Charges on a steamer of 2,000 tons, coming from the United States, with a cargo of (say) 3,500 tons general merchandise in, ballast out :—

	Fr.	c.
Protest at the Tribunal of Commerce	11	35
Survey on hatches and stowage	93	35
Board of Health	300	00
Opening of bridges, inwards	40	20
Pilotage in	396	00
Pilot on board	3	00
Help boat in	36	00
Custom House—	Fr.	c.
Salvage dues	120	00
Chamber of Commerce dues	800	00
Quay dues	2,000	00
Clearance and stamps	2	20
	2,902	20
Pilotage out	132	00
Pilot on board	6	00
Help boat out	48	00
Opening of bridges, outwards	40	20
Consul's fees endorsing articles	3	20
Sweeping the quay	12	00
Landing and re-shipping gunpowder and rockets	24	00
Advertisements	1	50
Stamps, printing, and petty expenses	12	00
Brokerage on 3,500 tons general merchandise	1,085	00

5,146 00 = £204 3s. 7d.

HENNEBONT.

Hennebont, in lat. 47°49' N., long. 3°18' W., is a small tidal port about 7 miles from Lorient, on the river Blavet.

Population.—9,000.

Imports.—Coal, iron, tin, steel, wine, iron ore, slag, etc.

Exports.—Pit-props, tin-plates, cider, potatoes, and fruit.

Accommodation.—Vessels up to 800 reg. tons can go up to the quays at spring tides. A new quay has been recently built. Steamers of

France—Hennebont (continued).

more than 800 reg. tons must stop at Three Pine Wharf, one mile from Hennebont, to discharge.

Port Charges.—Quay Dues :—5*d.* per reg. ton. **Sanitary Dues** :—1*d.* per reg. ton. **Toll Tax** :—3*d.* per 1,000 kilos., on vessels of over 150 reg. tons, loading goods on the new quay.

HONFLEUR.

Honfleur, in lat. 49°25' N., long. 0°14' E., is situated on the southern bank of the bay of the Seine.

Population.—9,500.

Imports.—Coal, timber, nitrate of soda, phosphates, pyrites, ammoniac salts, pitch, log ends, iron slag, cotton powder, oats, wood paste, etc.

Exports.—Fruit, seeds, wine, purple ore, poultry, eggs, potatoes, chocolate, oxide of zinc, etc.

Accommodation.—The entry of the port is set nearly due N. by S., about 875 yards to the east of the Cape of Grace, and is perfectly sheltered from westerly winds by the Hill of Grace.

The tidal harbour has an area of 10½ acres, a quay accommodation of 2,620 ft., with landing and storage space of about 1½ acres. Its bottom consists of mud, mixed with sand, whereon vessels may be stranded without suffering any damage. The channel, leading to the tidal harbour, is 1,300 ft. long and 200 ft. wide at its narrowest point. Honfleur harbour has four wet docks, viz. : West Dock, Central Dock, East Dock, and Carnot Dock. The chief dimensions of these docks and their lock-gates are as follows :—

	Length.	Middle Breadth.	Area.	Length of Quay frontage.		Breadth.	Lock Sills.				
				Total.	Available.		Heights of the Lock Sills above the Zero of the Charts.	In Equinoxial Spring Tides co-efficient 1·17.	In ordinary Spring Tides co-efficient 1·00.	In ordinary Neap Tides co-efficient 1·00.	In lowest Neap Tides co-efficient 0·50.
	Ft.	Ft.	Acres.	Ft.	Ft.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.
West Dock .	425	255	2·5	1,245	980	33 10	9 2	17 9	16 9	11 10	9 10
Central Dock	425	295	3	1,310	1,310	40 0	5 7	21 4	20 4	15 5	13 5
East Dock .	980	236	5·3	2,330	2,330	54 0	3 11	23 0	22 0	17 1	15 1
Carnot Dock	2,620	230	15·9	6,020	2,820	42 0	This dock opens into the latter.				
Total . .			26·7	10,905	7,440						

The first three docks are in direct communication with the outer harbour, the fourth dock opens into the East Dock.

There are five hand cranes on the quays of Honfleur harbour—two on the quarantine quay (outer harbour); one on the transit pier; one on the east pier (outer harbour), and one on le Paulmier Quay (Central Dock), all belonging to companies or private individuals.

There are also four movable steam cranes, and one steam crane to lift 6 tons, on the north quay of the East Dock, and three floating steam cranes in the docks, all belonging to the Chamber of Commerce. The time allowed for loading or unloading varies according to tonnage, as follows :—

France—Honfleur (*continued*).

Vessels of 50 reg. tons or under	6 days.
" " 51-100 reg. tons	8 "
" " 101-200 " "	12 "
" " 201-500 " "	20 "
" " over 500 tons	26 "

There is a gridiron, 230 ft. long, and 33½ ft. wide, in the West Dock. Line of railways are placed along the quays in direct communication with the station of the Western Railway Co. Railway communication with Rouen, Paris and the centre of France. Steamship communication with Havre and Southampton.

Signals.—1. A flag-staff for tide-signals, 124 ft. high, placed at the end of the east pier, serves to indicate, by day, every 10 in., commencing from 10 ft., depth of water that there is above the zero of the charts. The same indications are given by night by a flashing tide-light that is situated near the flag-staff.

2. A white flag bordered with blue, hoisted on a smaller flag-staff placed at the end of the east pier, indicates that the dock gates are open.

3. A blue flag hoisted on a particular flag-staff fixed upon the quay at the east pier, in front of the signal house, indicates that vessels are forbidden to leave the harbour.

4. When the entry to the port is forbidden, all signals are replaced by a red flag hoisted on the top of the main flag-staff.

5. A staff 33 ft. high, placed 50 ft. from the end of the west pier, serves also to indicate the signals 3 and 4. Two balloons hoisted on the top of the staff indicate that vessels are forbidden to leave the harbour, and one balloon that the entry to the port is forbidden.

6. A staff is further fixed up at the entry of the port, at the N.W. corner of the shipbuilding yards, on which is hoisted a cone indicating that strong winds, gales, or hurricanes are expected.

7. Every time the flood-slucices are going to be opened in the outer harbour or channel, notice of the intended operation is given during the preceding tide by a blue flag hoisted on the sluices. Captains must then take the necessary steps to protect their vessels from any damage from such opening.

Pilotage.—Compulsory when entering and leaving the harbour. From the main roads¹ to Honfleur, or to the Hoc, 26 fr. per 100 reg. tons, in addition to food. These dues are reduced by one-quarter for vessels boarded in the small roads, viz., 0 fr. 195 mm. per reg. ton; by two-thirds for those boarded in the channel of the port, viz., 0 fr. 087 mm. per reg. ton. They are increased by one-third for vessels boarded within a radius of 14 to 34 miles from Cape La Hève, viz., 0 fr. 347 mm. per reg. ton; by one-half for vessels boarded beyond that radius, viz., 0 fr. 390 mm. per reg. ton. Vessels boarded within a radius of 14 miles from Cape La Hève are considered as having been boarded in the main roads, viz., 0 fr. 260 mm. All vessels coming from the west and sailing towards the Honfleur roads that are boarded by a pilot must pay him a tide of 3 fr. for every 12 hours completed till he reaches the line N. by S. passing through Cherbourg. The pilotage dues for vessels going out are two-thirds of the charges fixed in

¹ The main road of Honfleur is the part that extends to the west of the line N. by S. passing through the meridian of the Havre east pier light; the small road is the part that extends to the E. of that line as far as the line N. by S. passing through the Chateau d'Orcher. The channel begins at the line joining the two lights situated at the entry of the port.

France—Honfleur (continued).

the tariff when a vessel leaves with cargo, and half these charges when leaving in ballast or having merely put in for shelter, viz., two-thirds, 0 fr. 173 mm. ; half, 0 fr. 130 mm. per reg. ton. The minimum is 8 fr. 50 c., and there is an additional 6 per cent. for pilot-major's fee.

Towage.—Vessels coming in: From Pennedepie river to the port, 30 c. per ton of cargo (minimum 30 fr.) ; from Havre roadstead, 40 c. per ton of cargo (minimum 50 fr.) ; from the port of Havre or within 5 miles beyond the Havre roadstead, 50 c. per ton of cargo (minimum 50 fr.) Vessels going out: From the port to the Cape of Grace or to the Channel of the Seine, 15 c. per ton of cargo (minimum 15 fr.) ; from the port to Amfart or to Berville, 25 c. per ton of cargo (minimum 25 fr.) ; from the port to the Ratier (N.W. buoy), 30 c. per ton of cargo (minimum 30 fr.) ; from the port to the roadstead or to the port of Havre or to Tancarville, 40 c. per ton of cargo (minimum 50 fr.). Vessels must supply their own tow ropes ; if not, 25 per cent. more is charged.

Port Charges.—Quay Dues and Sanitary Dues :—See France.

Lifeboat Dues :—5 c. per reg. ton. **Tonnage Dues :—**45 c. per reg. ton.

Brokerage :—Sailing vessels entering or leaving in ballast, 12½ c. per reg. ton ; entering fully or partly laden, 50 c. per ton of cargo ; leaving fully or partly laden, 25 c. per ton of cargo. Steamers entering in ballast with passengers, 25 c. per horse-power ; leaving in ballast without passengers, nil. ; leaving in ballast with passengers, 12½ c. per horse-power ; entering fully or partly laden, 50 c. per ton of cargo ; leaving fully or partly laden, 25 c. per ton of cargo. **Water :—**Water can be obtained from pipes which run along the quays of the outer harbour and the wet docks. Drinking water—vessels of 100 reg. tons or under, 4 fr. ; from 101 to 150 tons, 5 fr. ; 151 to 200 tons, 7 fr. 50 c. ; 201 to 250 tons, 10 fr. ; 251 tons to 300 tons, 12 fr. 50 c. ; 301 tons to 500 tons, 15 fr. For every additional 100 reg. tons or fraction of the same, 2 fr. 50 c. The tariff for water for engines is raised by one-half. **Ballast** of good quality is plentiful.

Assistance Boats.—Assisting inside the port, 9 fr. ; assisting in or out, 12 fr. ; assisting as far as Vasouy, 12 fr. ; Pennedepie, 16 fr. ; Villerville or Hoc, 21 fr. ; the main road of Havre, 24 fr.

HOURDEL.

Hourdel, in lat. 50°13' N., long. 1°35' E. is situated at the mouth, on the left bank, of the river Somme.

Population.—300.

Accommodation.—This port is quite near to deep water, and steamers drawing from 14 to 18 ft. can easily load here. The harbour is well sheltered, bottom of sand and mud.

Expenses same as at St. Valéry-sur-Somme.

HYÈRES ROAD.

Hyères Road is in lat. 43°7' N., long. 6°7' E.

Population.—17,659 (Town).

Export.—Salt.

Accommodation.—The Bay of Hyères runs 3½ miles into the land, and contains several good anchorages, most of which are exposed to S.E. and S.W. winds. Badine Road, about a mile N.E. of Cape Esterel,

France—Hyères Road (*continued*).

affords excellent shelter from all W. winds ; anchorage in $6\frac{1}{2}$ or 7 fathoms, on sand and mud. Salines anchorage is, with N.E. winds, the best in the bay. A berth will be found S. of the buildings on the beach and E. of the mouth of the river, in 6 or 7 fathoms, on mud. The landing place is at the piers near the salt works. Between the Gapeau river and Fort Bregançon on the parallel, or about $1\frac{1}{4}$ miles from the shore, is the anchorage for large ships in from 9 to 11 fathoms on mud and weeds, or anywhere between the meridian and the Salines and Argentière points.

Water may be obtained from the river.

ISIGNY.

Isigny, in lat. $49^{\circ}19'$ N., long. $1^{\circ}6'$ W., is on the right bank of the river Vire in the department of Calvados.

Population.—About 3,000.

Imports.—Timber, grain, etc.

Exports.—Butter, cattle, etc.

Accommodation.—Isigny possesses a small and safe tidal harbour. There is $13\frac{1}{2}$ ft. at high water springs at the quay side, and 19 ft. in the channel between the dykes.

Pilotage.—Strangers should employ a pilot.

PILOT DUES AT ISIGNY AND CARENTAN.

Registered Tonnage.	Isigny.		Carentan.	
	French Vessels and Foreign Vessels on the French Registry.	Foreign Vessels not on the French Registry.	French Vessels and Foreign Vessels on the French Registry.	Foreign Vessels not on the French Registry.
From 20 to 30 tons . . .	Fr. 9	Fr. c. 12 00	Fr. 10	Fr. c. 13 33
" 31 " 40 " . . .	13	17 33	14	18 67
" 41 " 50 " . . .	16	21 33	17	22 67
" 51 " 60 " . . .	19	25 33	20	26 67
" 61 " 70 " . . .	22	29 33	23	30 67
" 71 " 80 " . . .	25	33 33	26	34 67
" 81 " 100 " . . .	28	37 33	29	38 67
" 101 " 120 " . . .	31	41 33	32	42 67
" 121 " 140 " . . .	35	46 67	36	48 67
" 141 " 160 " . . .	40	53 33	41	54 67
" 161 " 180 " . . .	45	60 00	46	61 33
" 181 " 200 " . . .	50	66 67	51	68 00
Over 200 tons . . .	25 c. per ton above 200 tons.	$\frac{1}{2}$ more than the due on French vessels.	28 c. per ton above 200 tons.	$\frac{1}{2}$ more than the due on French vessels.

Port Charges.—**Quay Dues:**—50 c. per reg. ton. **Sanitary Dues:**—10 c. per reg. ton. **Ballast:**—Sand, 1 fr. per 1,000 kilos.

L'ABERILDUT.

L'Aberildut, in the department of Finistère, is in lat. $48^{\circ}28'$ N., long. $4^{\circ}45'$ W.

Export.—Granite.

Accommodation.—This village is about $1\frac{1}{2}$ miles from the sea and the channel leading to it has 8 ft. of water at neap tides, and 12 ft. at springs. When inside, vessels are perfectly sheltered from all winds. At

France—L'Aberildut (continued).

low water the port dries, but the bottom being soft sand, vessels lie aground in safety.

Pilotage.—A pilot should always be employed, as the entrance is extremely difficult. The charges are 1 fr. per draught foot. **Towage:**—A small steam-tug can be had, for towing vessels out, at a cost of 8 fr.

Port Charge.—The only port due is 2 fr. paid to the Customs.

LA CIOTAT.

La Ciotat, in lat. $43^{\circ}11' N.$, long. $5^{\circ}36' E.$, is about 14 miles S.E. of Marseilles.

Population.—About 10,000.

Imports.—Timber, sulphur, iron, salt, etc.

Exports.—Anchovies, sardines, dry fruits, wine, and olive-oil.

Accommodation.—This port is formed by two moles, and is small but well sheltered. Shipbuilding is carried on here, and repairs can be done. The basin has a water area of $19\frac{3}{4}$ acres; length, 837 ft.; width, 558 ft.; width of entrance, 295 ft.; depth at entrance, $19\frac{3}{4}$ ft.; depth in basin, $9\frac{1}{2}$ to 18 ft.; length of quayside, 984 ft.; depth at quayside, $9\frac{1}{2}$ ft. There is a floating crane to lift 60 tons, and sheer legs to raise 50 tons. The dry dock is 511 ft. long over all, $70\frac{1}{2}$ ft. wide at the entrance at high water ordinary spring level, and $21\frac{3}{4}$ ft. on the sill at high water ordinary springs. There is also a patent slip.

Pilotage.—Rates according to tariff. Steamers to 150 tons, and sailing vessels to 100 tons, are free of pilotage.

Port Charges.—**Passport:**—1 fr. 20 c. **Quay Dues:**—Rates vary according to the net tonnage of a vessel and the quantity of goods loaded or discharged.

Pro Forma Charges on a vessel of 600 reg. tons, from European port, cargo in and ballast out, drawing 19 ft. loaded:—

	Fr.	c.
Pilotage in	60	00
Manifest	63	25
Consul's fees	38	90
150 tons of ballast	262	50
Customs' dues	91	85
Translations	60	00
Quay dues at 50 c. per reg. ton	300	00

876 50 = £34 15s. 7d.

LANDERNEAU.

Landerneau, in lat. $48^{\circ}27' N.$, long. $4^{\circ}15' W.$, is about 12 miles N.E. of Brest.

Population.—About 7,000.

Imports.—Salt, coal, iron, steel, manure, etc.

Exports.—Grain, wheat, barley, oats, cheese, butter, eggs, etc.

Accommodation.—The harbour is formed by the mouth of the river Elorn, and can be entered by vessels of 300 reg. tons. The river flows into Brest harbour. There is $7\frac{1}{2}$ ft. of water at high water neap tides, and 13 ft. at springs. With westerly winds the tides rise higher. Vessels

France—Landerneau (*continued*).

going up the river must have a fair wind or be towed. Ships take the ground alongside the quays on a bottom of soft mud.

Pilotage.—Strangers bound for Landerneau should anchor off Brest, and apply to the pilots' or tug-boat's office. If a pilot be detained beyond one day of 12 hours, he is entitled to payment for each other day at the rate of 6 fr. per day.

Port Charges.—Quay Dues:—50 c. per reg. ton. **Labourage:**—4 fr. per day.

Pro Forma Charges on a vessel of 66 reg. tons (114 tons burden), drawing 10 ft. :—

	Fr.	c.
Pilotage, Brest to Landerneau	14	00
Entry	12	00
Health dues and pass	8	70
Brokerage, 114 tons at 50 c.	57	00
Ballast, 40 tons at 1 fr. 15 c.	46	00
Pilotage from Landerneau to Brest	14	00
Quay dues, 50 c. per reg. ton	33	00

184 70 = £7 6s. 7d.

LANNION.

Lannion, in lat. 48°44' N., long. 3°28' W., is on the river Guer, 35 miles W.N.W. of St. Brieuc.

Population.—About 7,000.

Import.—Coal.

Exports.—Grain and potatoes.

Accommodation.—There is a spacious quay, and the town can easily be reached by vessels of about 300 tons, drawing up to 13 ft. It is about 5 miles from the mouth of the river. At the top of the harbour the tide rises 14 ft. at the spring tides, and from 10 to 11½ ft. at neap tides. Steamers carrying 500 tons of cargo visit the port, and are discharged at the rate of 120 to 150 tons per day, according to the season.

The expenses of a steamer with 500 tons of coal inwards, and outwards light, amount to from £35 to £40.

LA NOUVELLE.

La Nouvelle, in lat. 42°57' N., long. 3°1' E., is the port of Narbonne, with which town it is connected by a canal.

Population.—About 2,500.

Accommodation.—The port is formed by two moles, and has a depth of 13 ft. at the entrance from November to March, and from 15 to 16 ft. from April to October. These moles, 100 metres (327½ ft.) apart, are 2,640 metres (8,653 ft.) long. The port presents difficulties in entering when the S.E. winds are strong, and it is advisable to employ a pilot when coming in for the first time.

Pilotage.—12 c. per reg. ton coming in, and 8 c. going out. Hire of pilots' boat, when required, 18 fr. for mooring and unmooring any kind of vessel.

Port Charges.—Sailing vessels in ballast, 10 c. per reg. ton; entering and discharging, when completely or partly loaded, 20 c. per ton of

France—La Nouvelle (continued).

goods. Steamers, entering in ballast with passengers, 10 c. per reg. ton ; $7\frac{1}{2}$ c. per reg. ton without passengers ; discharging with passengers, 10 c. ; entering to discharge 20 c. per ton discharged. **Wharfage Dues** :—20 c. per reg. ton.

LA PALLICE.

La Pallice is in lat. $44^{\circ}12'$ N., long. $1^{\circ}12'$ W.

Accommodation.—The roadstead affords good shelter and vessels can anchor in a depth of 33 ft. at low tide, within a few hundred yards of the entrance to the port.

Bassin de La Pallice.—Length, 2,333 ft. ; width, 400 to 670 ft. ; length of quayage, 5,556 ft. ; length of N. jetty, 1,177 ft. ; length of S. jetty, 1,356 ft. ; length of lock, $505\frac{1}{2}$ ft. ; width of entrance, 70 ft. 3 in. ; depth on the sill at ordinary high water springs, 32 ft.

There are 2 dry docks belonging to the Government, but available for merchant vessels :—

No. 1 is 590 ft. long, 72 ft. wide at the entrance, and $30\frac{1}{2}$ ft. on the sill.

No. 2 is 364 " " 46 " " " " " $27\frac{1}{2}$ " "

The length given is over all ; width is at the high water ordinary springs level and the depth on the sill is at high water ordinary springs.

These docks can be sub-divided. No. 1 into docks 372 and 213 ft. long. No. 2 into docks 228 and 131 ft. long.

There is a gridiron 256 ft. long and 32 ft. wide.

There are rails connected with the French system of railways on the quays and a regular steamship communication with Europe, S. America, N. Africa, India, China, Japan, Vancouver, California, etc.

There are 16 steam cranes on the quay, 13 with a lifting capacity of $1\frac{1}{2}$ tons, and 3 with a lifting capacity up to 4 tons. On the Quai de l'Entrepôt there is a fixed steam crane capable of lifting 40 tons ; also a fixed hand crane with a capacity of 10 tons. There are large public storehouses on both sides of the dock.

Pilotage.—According to registered tonnage. From sea to dock, for steamers measuring 500 to 600 tons, 62 fr. 50 c. ; 601 to 700 tons, 68 fr. ; 701 to 800 tons, 72 fr. 50 c. ; 801 to 900 tons, 77 fr. ; 901 to 1,000 tons, 81 fr. ; and above 1,000 tons, 4 c. per ton register. Sailing vessels pay double.

Port Charges.—Much the same as at La Rochelle.

LA ROCHELLE.

La Rochelle, in lat. $46^{\circ}10'$ N., long. $1^{\circ}10'$ W., stands on the shore in a bight to the N.E. of Basque Road.

Population.—25,000.

Imports.—Coal, wood, phosphates, china clay, wine, salt fish, nitrates, jute, wood pulp, and petroleum.

Exports.—Cognac, corn, potatoes, wine, mining timber, chemical manures, hay, oysters, and general produce.

Accommodation.—The port is well situated with the safest roadstead in the Bay of Biscay. Vessels can enter very easily in all weathers. The depth available for entering at high water ordinary springs is 22 ft., and at ordinary neaps 20 ft.

France—La Rochelle (continued).

Bassin Extérieur.—Water area, $7\frac{1}{2}$ acres; length of dock, $666\frac{1}{2}$ ft.; extreme width, 600 ft.; length of quayage, 2,793 ft.; width of entrance, 55 ft.; depth of water on the sill at high water, ordinary springs, 22 ft.

Bassin Intérieur.—Water area, $3\frac{1}{2}$ acres; length of dock, $416\frac{1}{2}$ ft.; width, 333 ft.; length of quayage, 1,023 ft.; width of entrance, 40 ft.; depth of water on the sill at ordinary springs, 16 ft. 8 in. There are 15 cranes capable of discharging 20 tons per hour; 2 small ones of from $1\frac{1}{2}$ to 4 tons.

Bassin du Canal (St. Nicolas).—Length of quayage, 908 ft.; width of entrance, 22 ft. 5 in.; depth on the sill at ordinary springs, 11 ft. 9 in.

Tidal Harbour.—Extent of surface, 8 acres; length of quayage, 2,506 ft.; depth at high tide ordinary springs, 16.7 ft.; depth at low tide, nil. There is a crane to lift $1\frac{1}{2}$ tons.

There are careening wharves, also several building and repairing works, with a full supply of materials for repairing machinery.

Pilotage.—According to registered tonnage. From sea to dock, of steamers measuring 550 to 600 tons, 75 fr.; 601 to 700 tons, 80 fr.; 701 to 800 tons, 85 fr.; 801 to 900 tons, 90 fr.; 901 to 1,000 tons, 95 fr.; and above 1,000 tons, 5 c. per ton reg. Sailing vessels pay double.

Pilotage is controlled by Government.

Port Charges.—**Sanitary Dues:**—10 c. per reg. ton for vessels from a European port; from a port outside Europe, 15 c. **Navigation Dues:**—50 c. per reg. ton for vessels from a European port; from a port outside Europe, 1 fr. **Town Dues:**—25 c. per reg. ton. **Ballast:**—96 c. per ton. **Stevedore:**—Loading, 1 fr. per ton; mining timber, 1 fr. 25 c. Discharging, 1 fr. per ton; timber, 2 fr. 75 c. per standard. **Brokerage:**—

Sailing vessels.	Entered in ballast without passengers, none	ditto, cleared	none.
"	Entered with full or part cargo, per ton of cargo, 50 c.	ditto, cleared	50 c.
Steamers and Sailing vessels	Entered in ballast with passengers, per reg. ton		25 c.
"	" " without " " "		none.
"	Cleared in ballast with " " "		25 c.
"	" " without " " "		none.
Steamers.	Entered with full or part cargo, per ton of cargo, 50 c.	ditto, cleared	50 c.

Water.—1 fr. per cubic metre.

Pro Forma Charges on a steamer of 627 reg. tons, with a cargo of, say, 1,200 tons of coal:—

	Fr.	c.
Pilotage, inwards, compulsory	80	00
" outwards	80	00
Boat help, inwards, if wanted	15	00
" outwards	15	00
Inwards entrance at Custom House and stamps	12	00
Quay dues	313	50
Town dues (toll dues)	156	75
Sanitary dues, European	62	70
" " outside Europe, 94 fr. 05 c.		
Passport	1	95
Brokerage, coal or pitch per steamer (other goods 50 c. per ton)	100	00
Labourers, 1 fr. per ton	1200	00
Surveying hatches	16	35
Bill of lading stamp	1	20
Life boat	1	00

2055 45 = £81 11s. 1d.

LA SEYNE.

La Seyne is in lat. $43^{\circ}5'$ N., long. $5^{\circ}52'$ E.

Population.—14,000.

France—La Seyne (*continued*).

Imports.—Wood, iron, and coal.

Accommodation.—This port is situated in the roadstead of Toulon, at the end of a channel having a mean depth of 21 ft. Vessels not drawing more than 16 or 18 ft. can ascend the channel and anchor in the harbour, close to the town. The channel is marked off by buoys. Steam-tugs can be had. Shipbuilding is carried on here.

The basin has a mean length of 656 ft.; mean width, 400 ft.; water area, 6 acres; width of entrance, 105 ft.; depth at the entrance, $19\frac{3}{4}$ ft.; depth in the basin, $16\frac{1}{2}$ ft.; length of quayage, 2,296 ft.; depth alongside the quays, $9\frac{1}{2}$ ft. There are no cranes. There are 3 slipways, two worked by electric winches and one by hydraulic power, capable of hauling up vessels of 1,500, 2,000, and 4,000 tons respectively, but not more than 426 ft. long. These slips are fitted with launch ways closed by floating doors, as they are frequently used for shipbuilding.

Pilotage.—Fishermen can generally be had outside to act as pilots.

Towage:—The general charge is 4 ft. per reg. ton.

Port Charges.—Same as Toulon. **Ballast:**—Brought off in lighters, about 2 fr. per ton.

LE CROISIC.

Le Croisic is in lat. $47^{\circ}18'$ N., long. $2^{\circ}30'$ W.

Population.—2,500.

Imports.—Coal, salt, cod-roe, ice, etc.

Export.—Salts.

Accommodation.—There is a depth at high water of 5 metres 20 centimetres (17 ft. 1 in.), at low water, of 3 metres 30 centimetres (10 ft. 10 in.), and at lowest spring tides, of 3 metres (9 ft. 10 in.). The length of Tréhic jetty is 852 metres (2,792 ft.). There is a chain for hauling up vessels.

Pilotage.—Compulsory for foreign vessels. Steamers, $7\frac{1}{2}$ c. per reg. ton; sailing vessels, under 100 reg. tons, 2 fr. 50 c. per metre draught, from the roadstead in the harbour, plus the distance outside the roadstead.

Port Charges.—Wharfage and Sanitary Dues:—60 c. per reg. ton.

Passport:—1 fr. 95 c. **Towage:**—30 c. per reg. ton from the roadstead in the harbour. **Labour:**—4 fr. per day. **Brokerage:**—From 20 fr. to 40 fr. according to tonnage.

LIBOURNE.

Libourne, in lat. $44^{\circ}56'$ N., long. $0^{\circ}6'$ W., is situated at the confluence of the rivers Dordogne and Île, 18 miles E.N.E. of Bordeaux.

Population.—About 15,000.

Accommodation.—Vessels of 250 tons burden can reach the town. There is from 11 to 15 ft. of water at high tide.

A few vessels come here annually with cargoes of coal from England and timber from Sweden and Norway.

LOCTUDY.

Loctudy, in lat. $47^{\circ}51'$ N., long. $4^{\circ}12'$ W., is situated at the mouth of the river Pont l'Abbé.

France—Loctudy (*continued*).**Import.**—Cod-roe.**Exports.**—Potatoes, grain, and props.**Accommodation.**—There is a quay 350 ft. long. Vessels inside are quite safe, but a pilot is indispensable.**LORIENT.**

Lorient, in lat. 47°47' N., long. 3°22' W., is situated at the confluence of the rivers Blavet and Scorff.

Population.—46,403.**Imports.**—Coal, iron, wine, brandy, olive oil, manufactured goods and sundries.**Exports.**—Sardines, apples, potatoes, tin-plates, pit-props, etc.**Accommodation.**—The Lorient Roads form a fine and secure harbour, where the largest vessels afloat can ride securely at anchor in any weather, or any state of the tide. The island of Groix, lying about 8 miles to the S.W. of Lorient, forms a perfect shelter during S. and S.W. winds, where vessels can lie in security during the heaviest gales. Vessels drawing 28 ft. can come up to the port at high water neaps, and 16½ ft. at low water neaps.**Lorient Wet Dock.**—The length of the dock is 1,165 ft.; width, 230 ft.; length of quayage, 2,280 ft.; width of entrance, 52½ ft.; depth on the sill at high water, highest springs, 18½ ft.; length of quayage in the harbour, 1,116 ft. There are 2 cranes to lift up to 5 tons. There is a wooden wharf at the end of the entrance channel, at which vessels of moderate draught can load and discharge at all states of the tide. The wharf is 171 ft. long, 26 ft. wide, with 26 ft. alongside, at highest springs, and 13 ft. at lowest neaps.

There are 2 Government dry docks :—

No. 1 is 380½ ft. long over all; 55 ft. wide at the entrance at high water ordinary springs level; and 22 ft. on the sill at ordinary high springs. No. 2 is 512¾ ft. long over all; 85¾ ft. wide at the entrance, at high water ordinary springs level; and 27¾ ft. on the sill at ordinary high springs. These docks are available for merchant vessels only in cases of urgent necessity. Special permission must first be obtained.

There is a Government dockyard, employing about 4,000 hands, where some of the finest warships in the French navy are built. Lights and fires are prohibited on board all vessels discharging in the dockyard.

Time Signals.—Chronometers can be checked. A black ball is hoisted on a mast, at the harbour tower, 5 minutes before the signal. The ball is dropped at 10 h. 0 m. 0 s. a.m. Paris mean time, equal to 21 h. 50 m. 39 s. Greenwich mean time, and 21 h. 37 m. 14 s. local mean time.**Pilotage.**—Rates according to a tariff, regulated by the vessel's registered tonnage, and to the distance where the pilot is taken on board.**Port Charges.**—**Dock Dues** :—50 c. per reg. ton. **Sanitary Dues** :—10 c. per reg. ton. **Towage** :—As per agreement. **Water** : Good and fresh, free. **Brokerage** :—50 c. per ton on the gross cargo usually, but special arrangements may be made.

France.

MARANS.

Marans, in lat. $46^{\circ}18'N.$, long. $1^{\circ}0'W.$, is situated on the Sèvre Niortaise.

Population.—3,500.

Import.—Coal.

Export.—Cereals.

Accommodation.—The roadstead of Aiguillon, at the mouth of the river, is a sure refuge for vessels in danger. Vessels drawing 16 ft. and 235 ft. in length can go up as far as Marans during spring tides, and those drawing 14 ft. at low tides, by means of a canal which has been constructed between Brault and Marans. This canal is $3\frac{1}{2}$ miles long, the lock at entrance being 413 ft. in length and 36 ft. in width. The depth of water over sill at ordinary spring tides is 24 ft. 3 in. Depth of water over sill at neap tides, 18 ft. There is a quayage length of 500 metres (1,639 ft.) along the banks of the canal. The railways and 4 steam cranes facilitate operations.

Pilotage.—Vessels of 100 up to 250 tons, 18 fr. ; from 251 to 300 tons, 26 fr. ; plus 3 fr. 60 c. to 5 fr. 20 c. from Brault to Marans according to tonnage of vessels.

Port Charges.—Tonnage Dues:—Vessels coming from abroad loaded, 40 c. per reg. ton.

MARENNES.

Marennes is in lat. $45^{\circ}49'N.$, long. $1^{\circ}9'W.$

Population.—About 3,000.

Exports.—Salt, brandy, wines, etc.

Accommodation.—This is a small tidal port, about 8 miles S. of the mouth of the river Charente, suitable only for vessels of about 60 reg. tons.

There is a gridiron 249 ft. long. The wet dock is 2,224 ft. long, 91 to 196 ft. wide, $9\frac{1}{2}$ ft. deep at the entrance, and 26 ft. wide at the entrance. The lock is 164 ft. long by 26 ft. wide, and the outer sill is dry at low water.

MARSEILLES.

Marseilles is in lat. $43^{\circ}19'N.$, long. $5^{\circ}22'E.$ Distance by sea from Liverpool, 1,966 miles.

Population.—517,498.

Imports.—Coal, grain, flour, food-stuffs, oil-seeds and nuts, sugar, bran, rice, vegetables, vegetable and mineral oils, animal products, metals, timber, petroleum, tallow, sulphur, hides, silk, cotton, wool, etc.

Exports.—Coal, grain, flour, wine, sugar, coffee, ground nuts, vegetables, wood, oils, hides, cement, lime, tiles, machinery, metals, soaps, etc.

Accommodation.—The port is being rapidly extended, and ample accommodation is now available at the quays for 450 vessels at a time.

The docks are all surrounded with spacious quays, collectively of 15,000 metres in extent. A magnificent range of warehouses lies on the E. side of the Bassin du Lazaret. This block of buildings is built entirely of stone and iron, and the warehouses throughout are admirably supplied with hydraulic lifts. These warehouses can accommodate 50,000 tons of merchandise or

France—Marseilles (*continued*).

produce at once; in addition to which numerous stores and sheds of all sorts surround the quays of the Bassins du Lazaret, Arenc, and Pinède. The Bassin du Lazaret is used exclusively for Customs purposes; ships lie alongside the quays there and pass their cargoes directly into the dock buildings, whence they are either put into the bonded stores or moved away direct in railway trucks to their respective destinations. A branch of the railroad is brought down to the docks, and rails are laid down everywhere in the most convenient manner, the docks being thereby in direct railway connection with the interior of France, Switzerland, etc.

The following are the chief docks:—

Vieux Port.—Water area, 65 acres; length, 2,920 ft.; width (mean), 1,049 ft.; width at the entrance, $229\frac{1}{2}$ ft.; length of quayage, 6,210 ft.; depth of the dock, $19\frac{3}{4}$ to 23 ft.; depth of the entrance, $24\frac{1}{2}$ ft.; depth at the quayside, $11\frac{1}{2}$ to $21\frac{1}{2}$ ft. Only part of the quays are available for large vessels. There is a transporter over the entrance to this dock with a span of 540 ft. and a height of 164 ft. from the water-line. There are 3 hand cranes to lift 4, 8, and 25 tons respectively.

Bassin de Carénage (annexe of the Vieux Port).—Water area, $3\frac{3}{4}$ acres; greatest width, 492 ft.; width of entrance, $53\frac{1}{2}$ ft.; length of quayage, 1,811 ft.; depth, under $16\frac{1}{2}$ ft. Only part of the quays can be used by large vessels.

The following docks are protected from the sea by a jetty 11,780 ft. long:—

Bassin de la Joliette.—Water area, 54 acres; length, 1,640 ft.; width, 1,312 ft.; width of the principal entrance, $229\frac{1}{2}$ ft.; depth of the principal entrance, 28 ft.; depth in the dock, 23 to $32\frac{3}{4}$ ft.; total length of quayage, 8,148 ft.; depth alongside the quays, 13 to $19\frac{3}{4}$ ft.; depth at the jetty, 39 ft. The depth gradually increases from the Quai de Rive to the jetty. There are 4 fixed hydraulic cranes. The following are available at the Bassin de la Joliette, the Bassins du Lazaret and Arenc, the Bassin de la Gare Maritime, and the Bassin National:—1 floating sheer legs (steam), to lift 50 tons; 5 ditto, to lift from 10 to 60 tons; 4 ditto (hand), to lift from 3 to 10 tons; 9 floating steam cranes, to lift 2 tons.

Bassins du Lazaret et Arenc (separated by a mole).—Water area of both, $45\frac{3}{4}$ acres; length of Bassin du Lazaret, 984 ft.; width of Bassin du Lazaret, 758 ft. Length of Bassin d'Arenc, 1,195 ft.; width of Bassin d'Arenc, 1,184 ft.; width at the entrance from Bassin de la Joliette, 72 ft.; depth of entrance, $32\frac{3}{4}$ ft.; depth of dock from $19\frac{1}{2}$ to $32\frac{3}{4}$ ft.; total length of quayage, 8,630 ft.; depth alongside the quays, $19\frac{1}{2}$ to 23 ft.; depth at the jetty from 39 to 49 ft. The depth gradually increases from the Quai de Rive to the jetty. There are 35 fixed hydraulic cranes, to lift 1 to 3 tons; 20 movable ditto, to lift $1\frac{1}{4}$ tons; 1 floating crane, to lift 20 tons; 7 steam and hand cranes; 9 movable grain elevators. These cranes, etc., are available also for vessels in the Bassin de la Gare Maritime.

Bassin de la Gare Maritime.—Water area, $44\frac{1}{2}$ acres; dimensions, 1,715 ft. by 1,200 ft.; width at the entrance from Bassin d'Arenc, 164 ft.; depth at the entrance, $32\frac{1}{2}$ ft.; depth in the dock, 13 ft. to $32\frac{1}{2}$ ft.; length of quayage, 7,076 ft.; depth alongside the quays, 13 to $32\frac{1}{2}$ ft.; general depth at the Quai de Rive, $19\frac{3}{4}$ ft., increasing up to the jetty to 49 ft.

Bassin National.—Water area, $102\frac{1}{4}$ acres; length, 3,034 ft.; width, 1,689 ft.; width at the entrance, 345 ft.; length of quayage, 13,181 ft.;

France—Marseilles (continued).

depth at the entrance, $52\frac{1}{2}$ ft.; depth in the dock, $19\frac{1}{2}$ to 59 ft.; depth at the quayside, $19\frac{1}{2}$ to 23 ft.; depth at the Quai de Rive is about $19\frac{3}{4}$ ft., increasing gradually to $65\frac{1}{2}$ at the jetty. The following are available at the Bassin National and the Bassin de la Gare Maritime:—31 hydraulic movable cranes, to lift from 1 to 3 tons; 3 hydraulic winches (1 ton); 38 hydraulic capstans ($\frac{1}{2}$ to $\frac{3}{4}$ ton); 1 hydraulic sheer legs (120 tons). Connected with the Bassin National is a dock of $12\frac{1}{2}$ acres, with a depth of $26\frac{1}{2}$ ft., in which vessels can be repaired afloat, also another dock of $7\frac{1}{2}$ acres with a depth of $9\frac{3}{4}$ ft. in which vessels can be repaired on pontoons. The width of the entrance to these two docks from the Bassin National is $91\frac{1}{2}$ ft.

Bassin du Pharo.—Water area, $2\frac{1}{2}$ acres; greatest depth, 13 ft.; quay 164 ft. long. Only vessels of small size use this dock.

Bassin de la Pinède.—Water area, 66 acres; length, 1,968 ft.; width, 1,640 ft.; width at the entrance, 345 ft.; length of quayage, 10,584 ft.; depth at the entrance from 49 to $65\frac{1}{2}$ ft.; depth in the dock, 26 to $65\frac{1}{2}$ ft.; depth at the quayside, 26 to $29\frac{1}{2}$ ft. Depth at the Quai de Rive is $27\frac{1}{2}$ ft., increasing gradually to 72 ft. at the jetty. Part of this dock is reserved for the discharge of petroleum.

Bassin de Remisage.—This dock is employed for harbour lighters, for vessels laid up, and for vessels to be broken up. It is irregular in shape. Water area, 38 acres; greatest length, 2,362 ft.; greatest width, 734 ft.; depth, from $3\frac{1}{4}$ to 18 ft.; length of available quayage, 1,853 ft.

Avant-Port Sud.—Water area, $5\frac{1}{2}$ acres; depth, from $6\frac{1}{2}$ to 36 ft.; length of quayage, 1,247 ft. Part of this quayage is used during fine weather for loading and unloading.

Avant-Port Nord.—Water area, $65\frac{1}{2}$ acres; depth, from $19\frac{1}{2}$ ft. upwards (available for the largest vessels); length of quayage, 1,312 ft.

There are 6 dry docks, the entrance to which is from the Bassin National:—

No. 1	is	$595\frac{1}{2}$	ft. long,	$83\frac{1}{2}$	ft. wide at the entrance, and	25	ft. on the sill.
" 2	"	361	"	72	"	"	$21\frac{3}{4}$
" 3	"	295	"	$54\frac{1}{2}$	"	"	$21\frac{1}{4}$
" 4	"	295	"	$54\frac{1}{2}$	"	"	$21\frac{3}{4}$
" 5	"	$426\frac{1}{2}$	"	$54\frac{1}{2}$	"	"	$21\frac{3}{4}$
" 6	"	$426\frac{1}{2}$	"	$54\frac{1}{2}$	"	"	$21\frac{3}{4}$

Log-books.—Shipmasters trading here should have their log-books properly written up before their arrival in port, and produce them when asked for, as, in case of damage to ship or cargo, serious difficulty may otherwise be experienced in the settlement of average.

Vessels are allowed in the Old Port to cook on board if they take a watchman, paying him 6 fr. per day without his food, or 4 fr. if feeding him.

Pilotage.—Compulsory for all vessels except steamers when running a regular line. Dues are calculated on the net register tonnage. **Rates:**—Inwards: First line, 22 c. per reg. ton; second line, 16 c.; third line, 5 c. By night, 2 c. per ton extra on first and second line, and 1 c. on third line. Outwards: 15 c. per reg. ton. Steamers only pay half the above rates.

Port Charges.—Tonnage Dues:—Vessels from European or Mediterranean ports, 50 c. per reg. ton; from other ports, 1 fr. per reg. ton. **Port Dues:**—Since February 15, 1909, a new port due of 25 c. per ton is levied on all shipping (except coasting vessels and ships of war) loading or discharging cargo. Vessels that pay the dues three times during a year (January 1 to December 31) will be exempt from further payment during such year. **Sanitary or Health Office Dues:** Coasting vessels, 10 c. per reg. ton; ocean-going

France—Marseilles (continued).

vessels, 15 c. per reg. ton. **Towage**:—According to agreement. There are no dock dues. **Local Tax**:—0·125 fr. per net reg. ton.

Stevedore's charge for stowing ceramic or general goods, 1 fr. 25 c. per ton of 1,000 kilos

" " discharging timber, 3 fr. per standard.

" " " ground nuts, 1 fr. 80 c. per ton.

" " " coal, 1 fr. 25 c. per ton; grain, 50 c. per ton.

Ship Brokerage.—**SAILING VESSELS.**

	For the first 500 tons.	From 501 to 1,000 tons.	From 1,001 to 2,500 tons.	Above 2,500 tons.	
Entered—	Fr. c.	Fr. c.	Fr. c.		
With cargo wholly or more than nine-tenths composed of coal or iron ore, from any country, or with complete or part cargo of all kinds of merchandise from French Mediterranean ports (including Corsica and Algeria)	0 12·5	0 10	0 05		} No additional dues.
With complete or part cargo (coasting trade).	0 25	0 15	0 07·5		
With complete or part cargo (oversea trade).	0 27·5	0 20	0 10		
In ballast, or having put into port, with or without passengers:					
From French Mediterranean ports (including Corsica and Algeria).	0 05	0 05	0 02·5		
For coasting or oversea trade.	0 07·5	0 07·5	0 05		
Cleared—					
With complete or part cargoes					
For French Mediterranean ports (including Corsica and Algeria).	0 05	0 05	0 02·5		} No additional dues.
For coasting or oversea trade.	0 10	0 05	0 05		
In ballast, or having put into port, with or without passengers.	0 05	0 05	0 02·5		

STEAMERS.

	For the first 500 tons.	501 to 1,000 tons.	1,001 to 2,000 tons.	2,001 to 5,000 tons.	Above 5,000 tons.	
Entered—	Fr. c.	Fr. c.	Fr. c.	Fr. c.		
With cargo wholly or more than nine-tenths composed of coal or iron ore, from any country, or with complete or part cargo of all kinds of merchandise from French Mediterranean ports (including Corsica and Algeria)	0 12·5	0 10	0 05	0 02·5		} No additional dues.
With complete or part cargo (coasting trade).	0 27·5	0 12·5	0 07·5	0 02·5		
With complete or part cargo (oversea trade).	0 32·5	0 17·5	0 07·5	0 02·5		
In ballast, or having put into port, with or without passengers—						
From French Mediterranean ports (including Corsica and Algeria).	0 10	0 07·5	0 05	0 05		
For coasting or oversea trade.	0 20	0 10	0 05	0 02·5		
Cleared—						
With complete or part cargoes						
For French Mediterranean ports (including Corsica and Algeria).	0 05	0 05	0 02·5	0 02·5		} No additional dues.
For coasting or oversea trade.	0 10	0 05	0 05	0 02·5		
In ballast, or having put into port, with or without passengers.	0 05	0 05	0 02·5	0 02·5		

France—Marseilles (continued).

Charges are also made as follows for the translation of documents :—

	Fr.
Ordinary bill of lading	4
Extraordinary ditto	6
Protesting bill of exchange	6
Judicial deeds (1st page)	6
„ „ (2nd and each succeeding page)	4

Freighting on value of the freight :—By charter-party, for all countries, 2 per cent. By loading on the berth, for countries outside the Mediterranean, 2 per cent., Mediterranean ports (including Corsica and Algeria), 3 per cent.

The above rates are payable by the freighter, except in cases agreed otherwise in the freighting contract.

Sale of Ships.—2 per cent. on the price realized is payable—one-half by the buyer and one-half by the seller, unless otherwise agreed.

With respect to charges for brokerage it should be noted that :—

- (1) The basis of calculation is the cargo ton.
- (2) A vessel cleared from a port and obliged to put back is exempted from ship-brokerage, if it be consigned to the broker who despatched it.
- (3) Vessels compelled to put into port on account of bad weather or damages are exempted from all ship-brokerage.
- (4) When a vessel with cargo shall apply to a ship-broker on entering, it will be exempt from all dues on clearing in ballast.
- (5) The freight-brokerage includes the despatch of a stamped copy of the contract to each of the parties; and
- (6) Brokerage dues on vessels with cargoes (whether sailing or steam) cannot be less than the charges paid on the same vessels in ballast.

CHARGES FOR DRY DOCKS.

	Sailing vessels.	Steamers.
Entering and leaving the same day, per reg. ton	80 c.	96 c.
For each day after the first day	40 c.	48 c.
For opening and closing dock, etc. „	10 c.	10 c.

When the vessel, either sailing or steamer, is of 1,000 to 1,500 tons, the above price is reduced by half; vessels of 1,500 tons and above, the price is reduced by three-fourths.

The rate for opening and closing the docks, pumping out, etc., not to be less than 52 fr., nor more than 85 fr.

Ballast.—Stones : Sailing vessels, in old port, 2 fr. 25 c. per ton; in the new harbour, 2 fr. 50 c. per ton; steamers, 3 fr. 25 c. per ton.

Pro Forma Charges on a British steamer of 1,100 reg. tons, from the Black Sea, with 2,300 tons of grain in, and ballast out :—

	Fr.	c.
For Local dues	137	50
„ Pilotage in and out, first line	242	00
„ Health-office dues	110	00
„ Survey on hatches	30	00
„ Boat for mooring on arrival	20	00
„ Boat for shifting berth	20	00
„ Boat to the health-office	5	00
„ Health-office interpreter	5	00
„ Tonnage dues, 50 c. per reg. ton	550	00
„ Noting, extending, registering, and interpreting the protest at the Tribunal of Commerce	38	60
„ British Consul's account	16	50
„ Excise duty on ship's stores	35	40
„ Lifeboat	2	00

Carried forward 1,212 00

France—Marseilles (*continued*).

	Fr.	c.
Brought forward	1,212	00
For Fire and light on board, 4 days at 3 fr. per day	12	00
.. Agency, clearing the vessel in and out	385	00
.. Sundries, manifests, stamped papers, passport, etc.	68	00
.. Discharging expenses, 50 c. on 2,300 tons.	1,150	00
.. Man for surveying weight of cargo	40	00
.. Boat and cab hire on ship's service	10	00
	2,877	00 = £114 3s. 0d.

MENTONE.

Mentone is in lat. 43°47' N., long. 7°29' E. The port is small and of little importance.

Population.—11,000.

Imports.—Coal, building materials, cement, flour, etc.

Exports.—Olive oil, wine, lemons, etc.

Accommodation.—The port is sheltered S.E. and S.W. by a jetty 1,308 ft. in length. The mean depth of water, where ships can anchor, is 20 ft. The water area of the sheltered harbour is 14 $\frac{3}{4}$ acres; dimensions, 1,312 ft. by 1,312 ft.; depth at the entrance, 23 ft.; depth in the basin, 19 $\frac{3}{4}$ ft.; depth alongside the quays, 19 $\frac{3}{4}$ ft.; length of quayage, 1,312 ft.

Pilotage.—Inwards and outwards, 60 fr.

Port Charges.—**Quay Dues** :—50 c. per reg. ton. **Health Dues** :—10 c. per reg. ton. **Stevedore** :—Loading or discharging, 1 fr. 10 c. per ton **Labourage** :—5 to 6 fr. per day. **Ballast** :—1 fr. 50 c. per ton.

MONACO.

The port of Monaco is in lat. 43°45' N., long. 7°24' E.

Population.—Of principality, 15,180; of town, 3,292.

Imports.—Coal, corn, and wines.

Accommodation.—The port of Monaco is formed by two dams, each 170 metres (557 ft.) long, leaving between them a passage 100 metres (328 ft.) wide. A red light and a green light, placed on the extreme ends of the piers, show the entrance of the passage during the night. The port is available for vessels 350 ft. in length, and with a draught of 22 ft. There is a quay 410 metres (1,343 ft.) in length, alongside which vessels with a draught of about 22 ft. can moor. The quay will shortly be connected with the station of the Paris—Lyons—Marseilles Ry. Co., by a railway line 900 metres (2,950 ft.) in length, and vessels will then be able to discharge direct into waggons. Water hydrants placed along the quay enable ships to take water very easily, free of charge.

Pilotage.—Optional in and out. Steamers—Entrance, 4 c. per reg. ton, maximum 80 fr.; clearance, 2 c. per reg. ton, maximum 40 fr. Sailers—Entrance, 30 fr.; clearance, 15 fr. **Mooring** :—Optional. Steamers of 1,200 reg. tons and over, in, 30 fr.; out, 15 fr. Steamers of 500 reg. tons to 1,200 reg. tons, in, 20 fr.; out, 10 fr. Steamers of 500 reg. tons and under, in, 16 fr.; out, 8 fr. Change of anchorage :—Steamers of 1,200 reg. tons and over, 20 fr.; under 1,200 reg. tons, 15 fr. Stream anchorage :—Steamers of 1,200 reg. tons and over, 20 fr.; under 1,200 reg. tons, 15 fr. The fees for mooring, changing anchorage, and stream anchorage are the same for sailers as for steamers. Arrangements can be made by mutual agree-

France—Monaco (continued).

ment regarding pilotage and mooring of vessels with regular service, and for those coming into port at least several times annually.

Port Charges.—**Harbour Dues** :—50 c. per reg. ton. **Sanitary Dues** :—15 c. per reg. ton. **Ship's Papers** :—1 fr. 95 c. per vessel.

MORLAIX.

Morlaix is in lat. 48°36' N., long. 3°49' W.

Population.—About 14,500.

Imports.—Coal, clay, earthenware, etc.

Exports.—Barley, pork, butter, etc.

Accommodation.—To the westward of Primel Point is Morlaix Bay, at the head of which are the mouths to the rivers Morlaix and St. Pol-de-Leon. Within the mouth of the former river is Morlaix Road, where there is anchorage for vessels of the largest draught. The mouth of Morlaix river is on the eastern side of the bay, but its navigation is too intricate to be attempted without a pilot. From the fort, at the mouth of Morlaix river, to the gridiron of the town, the distance is about 10 miles. At high water the depth at the entrance of the gridiron is about 15 ft. About 15 to 20 men are employed to haul up ships. A tugboat can also be obtained here. Sailing vessels generally come up in one tide, except with strong winds from W.S.W. Ships of 350 reg. tons can easily go up to Morlaix two or three days before full and new moon.

Pilotage.—From the sea to Morlaix, 40 c. per reg. ton; outwards, 36 c. per reg. ton.

Port Charges.—**Sanitary Dues** :—10 c. per reg. ton. **Quay Dues** :—50 c. per reg. ton. **Town Dues** :—20 c. per reg. ton. **Brokerage** :—50 c. per ton landed. **Clearance** :—Inwards, 12 fr. Hauling up ships, 1 fr. 50 c. each man per tide. **Towage** :—30 c. per reg. ton.

Pro Forma Charges on a vessel of 85 reg. tons, ballast in, cargo out, drawing 10 ft. loaded.

	Fr.	c.
Pilotage in	34	00
Haulers up	6	00
Customs dues, i.e., sanitary dues and quay dues	51	00
Pilotage out	30	60
Brokerage	48	30
Town dues	17	00

186 90 = £7 8s. 4d.

NANTES.

Nantes, in lat. 47°14' N., long. 1°32' W., is situated on the river Loire, about 34 miles from its mouth.

Population.—133,247.

Imports.—Coal, pig-iron, sugar, coffee, spices, rice, tea, timber, hemp, ute, cord, oil, pitch, guano, wheat, bones, copra, wine, phosphates, cotton seed, and petroleum.

Exports.—Cereals, wine, manure, vegetables, sardines in oil, refined sugar, charcoal, pit-props, hoops, staves, slates, and general cargoes.

Accommodation.—Vessels drawing 16 to 17 ft. can always reach Nantes at any state of the tide, and at ordinary spring tides 19 to 19½ ft.,

France—Nantes (*continued*).

and at high spring tides 22 to 23 ft. Owing to powerful dredgings, steamers of moderate draught are able to come straight up the river, and since the end of the year 1908 all steamers have been able to reach Nantes without having to use the canal, which starts just above Paimbœuf, and is 10 miles long. The passage by canal takes $2\frac{1}{2}$ hours, and vessels incur no extra expense by using it.

The Canal Maritime de la Basse Loire commences $11\frac{1}{4}$ miles and ends $20\frac{1}{2}$ miles below Nantes. It is available for vessels 393 ft. long, $52\frac{1}{2}$ ft. beam, and with a mean draught of 19 ft. The canal affords anchorage in from $19\frac{1}{2}$ to 21 ft.

There are railway lines on all the quays at Nantes. Twenty-five movable steam cranes (to lift $1\frac{1}{2}$ tons each) can be brought where required, in addition to those noted below for each quay; also two sheers to lift 30 tons each, belonging to private yards.

The depth alongside each quay is a few inches greater than the draught available for vessels proceeding to it. The rise and fall of ordinary spring tides is 5 ft.

The first five quays are situated on the right bank of the Loire.

Quai de la Bourse.—Length, 492 ft. Can be reached at high water, ordinary springs, by vessels drawing 9 ft.

Quai de la Fosse.—Length, 3,609 ft. Can be reached at high water, ordinary springs, by vessels drawing from 14 ft. to 19 ft. There are 16 hand cranes, to lift from 1 to $3\frac{1}{2}$ tons.

Quai des Constructions.—Length, 1,181 ft. Can be reached at high water, ordinary springs, by vessels drawing from $17\frac{1}{2}$ ft. to $20\frac{1}{2}$ ft. There are 2 hand cranes, to lift 15 tons each.

Quai de L'Aiguillon.—Length, 1,772 ft. Can be reached at high water, ordinary springs, by vessels drawing from $20\frac{1}{2}$ ft. to 24 ft. There are sheers to lift 60 tons; hand crane to lift 5 tons.

Quai St. Louis.—Length, 984 ft. Can be reached at high water, ordinary springs, by vessels drawing from $22\frac{1}{2}$ ft. to 24 ft.

The next two quays are on the Ile Gloriette.

Quai de l'Ile Gloriette.—Length, 1,477 ft. Can be reached at high water, ordinary springs, by vessels drawing from $10\frac{3}{4}$ ft. to $12\frac{1}{2}$ ft.

Quai Moncoussu.—Length, 1,739 ft. Can be reached at high water, ordinary springs, by vessels drawing from $10\frac{3}{4}$ ft. to $12\frac{1}{2}$ ft. There is a hand crane to lift $2\frac{1}{2}$ tons.

Ile Faydeau—Point Ouest.—Length of quayage, 787 ft. Can be reached at high water, ordinary springs, by vessels drawing 9 ft.

Quai André Rhuis.—Length, 1,969 ft. Can be reached at high water, ordinary springs, by vessels drawing from $12\frac{1}{2}$ ft. to 19 ft.

Estacade Ile Bidement.—Length, 984 ft. Can be reached at high water, ordinary springs, by vessels drawing from $22\frac{1}{4}$ ft. to 24 ft. The wharf is situated on the left bank of the Loire, and is a continuation of the Quai André Rhuis, coming down the river.

Canaux de la Prairie au Duc.—Length of quayage, 1,640 ft. Can be reached at high water, ordinary springs, by vessels drawing from 9 ft. to $10\frac{3}{4}$ ft. There are sheers to lift 40 tons.

Quai des Antilles.—Length of quayage, 1,817 ft.; depth of water along the quays at low tide, lowest neaps, 23 ft.; depth of water along the quays at high water, spring tides, 30 ft.

France—Nantes (continued).

Vessels drawing $29\frac{1}{2}$ ft. are able to reach the quay at high water ordinary spring tides.

The above wharf is on the left bank of the Loire and below the Canaux de la Prairie au Duc. There is a soft sand or mud bottom on which, if necessary, vessels can safely ground. There is one 30 ton electric crane, and 12 $1\frac{1}{2}$ ton electric cranes. There is a patent slipway with a cradle 311 ft. long. Vessels are hauled up broadside on. Repairs to machinery can be done, but not to the hull.

Pilotage.—Compulsory for all sailing vessels above 80 tons, and steamers over 100 tons, and also when they move any distance above a cable's length. The signal for a pilot is a flag at the top of the mizenmast, which must be hauled down to the gaff as soon as he is on board. Brokers and consignees of foreign ships are responsible for the payment of pilotage in and out. These charges are determined in accordance with a scale incorporated in the ministerial decree of August 21, 1901. **Towage:**—About 1 fr. per ton register, up loaded, and in ballast down, or vice versâ, for one tug : 1 fr. 15 c. to 1 fr. 25 c. for two tugs.

Port Charges.—Vessels loading outwards have no *extra* port charges. **New Local Dues:**—Steamers : Loaded with coal, 25 c. per gross reg. ton. Other cargoes, 35 c. per gross reg. ton. **Sailing Vessels:** Loaded with any kind of cargo, 60 c. per gross reg. ton. To these dues are to be added : Steamers and Sailing Vessels, 15 c. per net reg. ton.

Brokerage.—

	Per French Ton Cargo Delivered.*		
	On the first 1,000 tons.	From 1,001 to 1,500 tons.	On Balance of Cargo.
	Centimes.	Centimes.	Centimes.
Inwards—			
Steamers entirely or over nine-tenths loaded with coal, patent fuel, pitch, coal, iron ore or pig iron . .	10	7	5
Sailing vessels entirely or over nine-tenths loaded with coal, patent fuel, pitch, coal, iron ore or pig iron .	20	10	5
Steamers or sailing vessels entirely or over nine-tenths loaded with pyrites or pulpwood . . .	20	15	10
Steamers or sailing vessels loaded with any other goods	50	40	25
Steamers or sailing vessels in ballast or putting in with or without passengers†	15 c. per ton register.		
Outwards—			
Steamers or sailing vessels with whole or part cargo	25 c. per French ton cargo shipped.*		
Sailing vessels in ballast with or without passengers	Nil.		
Steamers { In ballast without passengers † . . .	Nil.		
{ „ with „ † . . .	15 c. per ton register.		

* The ton cargo is calculated according to the French scale of tonnage fixed by decree of August 26, 1861.

† Should a vessel not have applied to a broker inward, brokerage fees for clearing in ballast shall be the same as for entering in ballast.

‡ Brokerage fees on any vessel loaded (either sailing or steam) cannot be less than those due by the same vessel in ballast.

Any vessel having to put back shall be free of brokerage if she has on the same voyage applied to a broker.

Ballast.—1 fr. 25 c. per ton.

France—Nantes (*continued*).

Pro Forma Charges on a steamer of 1,361 tons net register, from India, with 2,697 tons of cotton seed, drawing 21 ft. loaded :—

	Fr.	c.
Pilotage, sea to St. Nazaire	165	35
" St. Nazaire to Nantes	237	80
Sanitary dues	204	15
Quay dues and passport	1,363	65
Local dues at 35 c. on gross tonnage	951	80
Pilotage, Nantes to St. Nazaire	337	80
" St. Nazaire to sea	78	60
Brokerage	1,087	00
Admiralty surveyors, survey on cargo	78	60
Sworn weighers	337	25
	4,842	00 = £192 2s. 4d.

NICE.

The town of Nice, in lat. 43°42' N., long. 7°18' E., extends about 6 miles along the seashore, the port being situated to the E. of the town, between the rock called the "Château de Nice" and the Mont Boron, which separates the port of Nice from the open harbour of Villefranche.

Population.—134,232.

Imports.—Coal, textiles, cereals, chemicals, etc.

Exports.—Olive oil, perfumes, preserved fruits, wine, etc.

Accommodation.—The port of Nice is well protected. There are two basins and an outer port; one basin is 436 ft. by 636 ft., 207 ft. wide at the entrance, and has 20 $\frac{3}{4}$ ft. of water on the sill; the other is connected with it, and is 623 ft. by 440 ft., 125 ft. wide at the entrance, and has 19 ft. of water on the sill. Inside there is a uniform depth of 21 ft. The new jetty of the improved Nice harbour is nearly completed. The construction of a new wharf is also about to be taken in hand. There are 3,610 ft. of quayage with 19 $\frac{3}{4}$ ft. of water alongside. There are 4 electric cranes with a lifting capacity of from 1 to 1 $\frac{1}{2}$ tons. There is also an electric crane capable of lifting up to 30 tons.

Pilotage.—Charges according to agreement, but usually 75 fr. per vessel, entering and clearing included.

Port Charges.—Quay Dues:—Vessels coming from a country situated outside the limits of the international coasting trade, 1 fr. per ton; vessels coming from a country situated within the limits of the international coasting trade, 50 c. per ton. **Sanitary Dues:**—See **France**.

Tonnage Dues:—Coal, lime, etc., 20 c. per ton; other goods, 30 c. per ton.

Stevedore:—Discharging, 1 fr. per ton. **Ballast:**—1 fr. 70 c. per ton f.o.b. for sailing vessels and 2 fr. per ton for steamers. **Water:**—5 fr. per ton.

Brokerage:—15 c. per ton of cargo.

Pro Forma Charges on a steamer of 1,000 net reg. tons, with 2,000 tons cargo in, ballast out:—

	Fr.	c.
Custom House passport	1	95
Consular fees	3	20
Sanitary dues, 10 c. per reg. ton	100	00
Quay dues, 50 c. per reg. ton	500	25
Arbitrator's visit	12	00
Visa of the patent if at Italian Consulate, 10 fr.; if at Spanish Consulate	48	00
Carried forward	665	40

France—Nice (continued).

	Fr.	c.
Brought forward	665	40
Planks (about)	25	00
Pilotage	75	00
Boat attendance	50	00
Bills of lading, stamps included	1	20
Custom House for work done out of regular hours (about)	40	00
Permission to discharge	00	60
Letters and telegrams (about)	25	00
Brokerage, 15 c. per ton of cargo	300	00
	<hr/> 1,182 20 = £46 18s. 2d. <hr/>	

NOIRMOUTIER.

Noirmoutier, in lat. 47°0' N., long. 2°12' W., is on the eastern side of the island of the same name.

Population.—Of island about 8,000 (Town about 3,000).

Imports.—Colonial products, wines, wool, etc.

Exports.—Salt, oysters, grain, etc.

Accommodation.—It is only suitable for vessels of 10 ft. draught and under. Vessels drawing more than 12 ft. finish loading in the roadstead of Goemonour, about 3 miles from Noirmoutier. Vessels of 100 tons can enter at high water. Shipmasters bound to this port should steer for Pilier Island, taking care to leave it 1½ miles on the starboard hand. Large stone beacons will then be seen on each side of the entrance. Steer between these until Noirmoutier church-tower bears S., and then haul up for Bois de la Chaise Lighthouse, where a pilot can be obtained. A lighthouse has been erected, the light being visible for 20 miles.

Pilotage.—2 fr. per ft. draught in, and the same out.

Port Charges.—A vessel of 33 tons register, ballast in and cargo of salt out, paid, for all expenses, 60 fr.

OYESTREHAM.

(See **Caen and Oyestreham**, p. 113.)

PAIMBŒUF.

Paimbœuf, in lat. 47°17' N., long. 2°2' W., stands on the left bank of the river Loire.

Population.—2,500.

Imports.—Timber, coal, etc.

Exports.—Hay, grain, potatoes, and wine.

Accommodation.—The anchorage is good, being protected from S. and S.W. winds, and vessels lie at single anchor. Vessels discharging or loading have to lie in the river, moored to two anchors, and with two hawsers on shore. The current is very strong at spring tides—4 to 5 knots—and vessels should be provided with good mooring chains and hawsers. There is a graving dock 279 ft. long, 42¾ ft. wide at the entrance, and 14 ft. on the sill.

The quay is 623 ft. long; 295 ft. have a depth of 16½ ft. alongside, and 328 ft. have a depth of 19½ ft. alongside, at high water ordinary springs. There is 1 crane to lift 6 tons. The difference between high and low ordinary spring tides is 13 ft.

France—Paimbœuf (*continued*).

Pilotage.—The navigation of the Loire is intricate, and should not be attempted without a pilot. One can always be found in the neighbourhood of Belle Ile. **Towage** :—From Paimbœuf to Nazaire, and vice versâ, 50 c. per reg. ton ; from Paimbœuf to Nantes, 1 fr. 25 c. per reg. ton.

Port Charges.—Brokerage :—50 c. per ton inwards, and 25 c. per ton outwards. Ships proceeding to this port have to clear in and out at Nantes, as well as Paimbœuf, and have to employ a broker at each of the two places : the one in Nantes receiving two-thirds, and the one in Paimbœuf one-third. Brokerage is the same as at Nantes. **Provisions** : Bread, 30 c. to 50 c. per kilo. Meat, 1 fr. 50 c. per kilo. Water, free.

Pro Forma Charges on a steamer with a cargo of 1,750 tons d.w. of timber, 600 to 650 standards, from the Baltic or the North Sea :—

	Fr.	c.
Pilotage from sea to St. Nazaire roads	189	80
Pilotage from St. Nazaire roads to Paimbœuf	42	25
Boat assistance for mooring	20	00
Sanitary dues	68	80
Tonnage duty	344	35
Local dues	386	76
Passport	1	95
Entry of the vessel at Custom House	12	00
Protest at the tribunal	20	05
Sea report at Custom House	6	00
Clearance of vessel at Custom House	12	00
Brokerage (Nantes broker, 583 fr. ; Paimbœuf broker, 292 fr.)	875	00
Pilotage from Paimbœuf to St. Nazaire roads	42	25
Pilotage from St. Nazaire road to sea	44	60

2,065 81 = £81 19s. 3d.

PAIMPOL.

Paimpol, in lat. 48°47' N., long. 3°2' W., is situated about 22 miles N.W. of St. Brieuc.

Population.—About 2,500.

Imports.—Coal, wood, salt, wine, etc.

Exports.—Potatoes, cereals, etc.

Accommodation.—The old tidal harbour has been converted into a wet dock, 574 ft. long, 246 ft. wide, and with 1,607 ft. of quayage. The lock is 197 ft. long, and 39 ft. wide at the entrance.

The other wet dock is 691 ft. long, 328 ft. wide, and has 1,911 ft. of quayage. The lock is 147 ft. long, and 39½ ft. wide at the entrance, with a depth of 23 ft. on the sill at ordinary springs, and 11 ft. at ordinary neaps. There is a dry dock, 229 ft. long over all, 36 ft. wide at the entrance, at high water ordinary spring level, and 4½ ft. on the sill at high water ordinary springs.

The fairway from the roads to the dock is lined with buoys to enable ships to warp to the docks with a head-wind.

The port is mostly frequented by Iceland and Newfoundland fishing vessels, coasters, and foreign-going vessels up to 600 tons, which export the produce of the neighbouring country. Provisions are plentiful and cheap.

Pilotage.—Pilots are at all times obtainable, and are on the look out for the arrival of ships in the offing, where they board them. Pilotage is compulsory. Vessels up to 80 tons, 26 fr., and for every ton above 80 tons an additional 40 c.

France—Paimpol (*continued*).

Pro Forma Charges on a vessel of 100 reg. tons, coming in ballast and loading outward:—

	Fr.	c.
Sanitary dues	10	00
Permit, discharging ballast	0	60
Passport	2	00
Permit to load	0	60
Clearance at Customs	6	00
Discharging 50 tons of ballast	35	00
Pilotage { inward	34	00
outward	34	00
Brokerage, 40 c. per ton	40	00

162 20 = £6 8s. 9d.

PAUILLAC.

(See **Bordeaux and Pauillac**, p. 107.)

PERROS.

Perros is in lat. 48°48' N., long. 3°30' W.

Accommodation.—Perros Bay affords good shelter from westerly winds to vessels that can take the ground. There is 6 to 8 ft. at the loading quay.

Labour.—2 fr. per day.

Pilotage.—26 c. per ton.

Pro Forma Charges on a vessel of 48 reg. tons, ballast in and cargo out:—

	Fr.	c.
Translating manifest	3	00
Customs dues, etc.	8	80
Discharging ballast, 25 tons	14	50

26 30 = £1 0s. 10d.

POINTE AUX HERBES.

Pointe aux Herbes is in lat. 45°49' N., long. 1°9' W.

Population.—About 6,000.

Imports.—Coal, phosphate from bones, hewn stone, and timber.

Exports.—Grain, vegetables, linseed cake, colza oil, etc.

Accommodation.—Cargoes are discharged into lighters to proceed up the canal to Luçon, which is about 10 miles distant. Brokerage on cargo outwards, 25 c. per ton. Labourage, 3 fr. 50 c. per day.

Pro Forma Charges on a vessel of 115 reg. tons, cargo in and ballast out, drawing 11 ft. loaded:—

	Fr.	c.
Brokerage inwards, 195 tons of coal at 50 c. per ton	97	50
Health dues, 10 c. per reg. ton	11	50
Passport	2	00
Pilotage in and out	142	00
Ballast	10	00

263 00 = £10 8s. 9d.

PONT AUDEMER.

Pont Audemer, in lat. 49°21' N., long. 0°30' E., is situated on the river Rille, about 10 miles inland from La Roque, a small village on the Seine.

Population.—About 7,000.

Imports.—Coal, etc.

France—Pont Audemer (*continued*).

Accommodation.—No vessel drawing more than 9 ft. should charter for this port, although some drawing $10\frac{1}{2}$ ft. have ascended. The river is narrow, and the tides sometimes run strong, so that vessels are occasionally capsized. Shipmasters chartering for this port should do so at sufficiently high rates to allow of their being able to insure the amount of their freight in case of their vessels stranding before arriving at their destination.

Pilotage.—Pilots are taken at Berville, about 6 miles W. of La Roque. Pilotage for a vessel of 100 reg. tons, 15s. 1d.; if the pilot is taken from Honfleur, 30s. 2d.; if from Havre, 45s. 3d., with 1 fr. per day additional. Horses track from La Roque at a fixed rate of 3d. per ton of cargo.

Pro Forma Charges on a vessel of 58 reg. tons (100 tons burden), coal in and ballast out, drawing $8\frac{1}{2}$ feet:—

	£	s.	d.
Pilotage in (from Berville)	0	7	8
Horses tracking	1	4	0
Customs dues	1	11	10
Pilot out (to Berville)	0	3	10
	£3	7	4

PONT AVEN.

Pont Aven is in lat. $47^{\circ}47'$ N., long. $3^{\circ}22'$ W.

Exports.—Potatoes and fir-wood.

Accommodation.—This small tidal port is only frequented by coasters of about 70 tons burden, drawing 7 to 8 ft.

The only charge is 1d. per reg. ton for the Board of Health.

PONT L'ABBÉ.

Pont l'Abbé, in lat. $47^{\circ}51'$ N., long. $4^{\circ}12'$ W., is situated on the river of the same name, about 4 miles from the bar.

Import.—Timber.

Exports.—Potatoes and grain.

Accommodation.—The depth of water on the bar at neap tides is 8 ft.; at springs, 12 to 13 ft. Vessels drawing 12 ft. have crossed at springs. Alongside the wharf there is 10 ft. of water at springs, but vessels lie aground at low water.

Pilotage.—A pilot is indispensable.

Port Charges.—**Customs Dues:**—15 c. per ton. **Labour:**—Women, 2 fr.; men, 3 fr. per day. **Ballast:**—Free, if loaded by the crew. The dues on a vessel of 69 reg. tons, ballast in and cargo out, drawing 11 ft., amounted to £2.

PONTRIEUX RIVER AND PORT.

Pontrieux is in lat. $48^{\circ}42'$ N., long. $3^{\circ}9'$ W.

Imports.—Timber, slates, pit-coal, etc.

Exports.—Corn, flour, flax, etc.

Accommodation.—Various anchorages in the mouth of the river afford refuge to vessels of the largest draught, but they are difficult of access on the ebb, when they should not be attempted without a pilot.

France—Pontrieux River and Port (*continued*).

The first anchorage within the river for a vessel of large draught is on the right bank, to the N. and N.W. of a large rock named Mélus, which lies fronting the Douane, or Custom House office, on the Roc'har-On. The port of Lézardrieux, situated on the left bank of the river, nearly $2\frac{1}{2}$ miles above the Custom House office, is full of rocks, and dries out at all tides. The little port of Pontrieux is on the right bank of the river, at about half a mile below the town, and eight miles above Lézardrieux bridge. The tidal harbour is dry at low water and has $22\frac{1}{2}$ ft. at high. There is 1,246 ft. of quayage.

Pro Forma Charges on a vessel of 148 reg. tons, cargo in and ballast out :—

	Fr.
Pilotage in and out	65
Ballast, 1 fr. per ton	50
Custom House charges	18
Discharging coal (labourage)	70
	<hr/>
	203 = £8 1s. 1d.

PORNIC.

Pornic, in lat. $47^{\circ}8' N.$, long. $2^{\circ}6' W.$, is situated at the entrance of the Bay of Bourgneuf.

Population.—2,000.

Accommodation.—It is a tidal port and dries at low water. There is 12 to 13 ft. of water at high tide. Vessels lie on the mud at low water alongside the quay inside the mole. The outer harbour is 600 ft. long.

There are no brokers here ; the merchants do the Customs' work.

Pilotage.—Pilots can be had at St. Gildas Pointe, $5\frac{1}{2}$ miles to the N.W. Vessels drawing $10\frac{1}{2}$ ft., 40 fr. in, and the same out.

Port Charges.—Quay Dues :—50 c. per reg. ton. **Sanitary Dues :**—10 c. per reg. ton. During the summer months towage may be had ; cost of towage in, 50 fr.

PORT DE BOUC.

Port de Bouc, in lat. $43^{\circ}25' N.$, long. $4^{\circ}58' E.$, is at the E. side of the Gulf of Foz. It is situated at the outlet of the Etang de Berre, an extensive lake 3 miles N.E. of Bouc, with important salt works all round the shore.

Population.—1,000.

Imports.—Petroleum, codfish, phosphate, pyrites, coal, etc.

Exports.—Salt, dried cod, etc.

Accommodation.—Port de Bouc consists of two basins—the Bassin du Port and the Bassin Aubran.

Bassin du Port has a water area of 27 acres, is 1,082 ft. wide, and 1,082 ft. long. The entrance is 328 ft. wide and 22 ft. deep. The length of quayage is 394 ft. with $11\frac{1}{2}$ ft. of water alongside, but the depth in the dock is 21 ft. There are no cranes, but a new quay is under construction.

Bassin Aubran has a water area of $7\frac{1}{2}$ acres, is 886 ft. long, and 377 ft. wide. The entrance is 66 ft. wide, and $19\frac{3}{4}$ ft. deep. The length of quayage

France—Port de Bouc (*continued*).

is 886 ft. with $9\frac{1}{2}$ to 13 ft. of water alongside, but the depth in the dock is from 13 to 18 ft. There are no cranes.

In entering this port shipmasters must avoid a shoal, named the Tasques, which extends nearly 160 yds. S. from the elbow of the mole, on the N.W. side of the channel. The passage between this shoal and the southern light house has 30 ft. of water.

There are ship-building yards here for the building and repairing of iron and steel vessels. Port de Bouc is connected with the lake of Berre by a large canal, having a depth of 20 feet of water, and with the river Rhone at Arles by another canal 1,049 ft. long, 197 ft. wide, 8 ft. deep, and with 1,968 ft. of quays.

Pilotage.—Pilots, on being signalled, will always be found off the port. Pilotage in and out, sailing vessels, 37 c. per reg. ton; steamers, half these rates. **Towage:**—Out of the harbour, 70 to 100 fr.

Port Charges.—**Brokerage:**—Clearance, etc., 20 c. per ton cargo. **Commission** on charter-party, 2 per cent. **Ballast:**—1 fr. 60 c. alongside; in the hold, 2 fr. per ton. **Stevedore:**—Loading salt, 70 c. per ton; discharging, minerals and coal, 1 fr. per ton.

Pro Forma Charges on a steamer of 1,200 reg. tons, with a cargo of 3,000 tons:—

	Fr.	c.
Pilotage in and out, $18\frac{1}{2}$ c. per reg. ton	222	00
Custom House passport	1	95
Protest at the Tribunal of Commerce (if required in case of average)	35	00
Survey for opening of the holds (if required by captain in case of average)	46	10
Extracted certificate from the log-book for Custom House	5	00
Health office, 10 c. per reg. ton, from Europe (out of Europe, 15 c. per reg. ton)	120	00
Accompanying manifest, in and out	10	00
Custom House permits (about)	4	75
Boat assisting vessel in harbour, mooring or unmooring	25	00
Letters, postages, telegrams, and petties	8	00
Tonnage and harbour dues, 50 c. per reg. ton from Europe (out of Europe, 1 fr.)	600	00
Stamps for bills of lading in	1	20
Clearing vessel in and out, 20 c. per ton (3,000 tons)	600	00
	1,679	00 = £66 12s. 4d.

Note.—Vessels coming from Marseilles pay only half pilotage in. The same applies to vessels leaving Port de Bouc, the pilots belonging to the same society.

PORT-EN-BESSIN.

Port-en-Bessin is in lat. $49^{\circ}21'$ N., long. $0^{\circ}46'$ W.

Import.—Coal.

Accommodation.—This is a small creek, forming a harbour. A large amount of money has been expended in trying to make this a harbour of refuge. Two moles have been built, about 500 yds. long, and 550 yds. apart at the shore end, and 110 yds. apart at the entrance. Mooring buoys are laid down, but still with northerly winds it is unsafe.

Pro Forma Charges on a vessel of 148 reg. tons (250 tons burden), entering loaded, drawing 12 ft.; leaving in ballast, drawing $6\frac{1}{2}$ ft.:—

France—Port-en-Bessin (*continued*).

Pilotage, in and out	Fr.
Ballast, 1 fr. per ton	65
Custom House dues	18
Labourage, discharging coal	70

 203 = £8 1s. 1d.

PORT LOUIS.

Port Louis, in lat. 47°44' N., long. 3°19' W., is about 3 miles S.E. of Lorient.

Population.—About 4,000.

Imports.—Coal, wine, olive oil, etc.

Exports.—Sardines and pit-props.

Accommodation.—Port Louis can receive vessels up to 400 tons but is frequented chiefly by those of about 100 tons.

PORT ST. LOUIS DU RHÔNE.

St. Louis, in lat. 43°23' N., long. 4°49' E., is a port of some importance owing to its position on the Rhône, which is the natural outlet for the interior of France on the Mediterranean.

Imports.—Grain, copper ore, wine, phosphates, etc.

Exports.—Stone, salt, iron, bricks, etc.

Accommodation.—The port communicates with the sea by a canal 3,300 metres (10,800 ft.) long, and with the Rhône by a sluice 160 metres (524 ft.) long and 22 metres (72 ft.) wide. The dock, which has an area of 12 hectares (30 acres), constitutes, with its vertical wharves, a first-class port, quite safe, and easy of access in all weathers. There is 19½ ft. of water in the canal, basin, and sluice at low water. Small repairs to vessels can be executed. Workmen can easily be obtained, but the number being rather limited, the cost of labour is higher than in Marseilles.

The Dock.—Length, 1,328 ft.; width, 990 ft.; width of the entrance, 98 ft., depth at the entrance and at the quayside, 19½ ft.; length of quayage, 2,811 ft.

The Rhône Basin.—Dimensions of the available part, 1,099 ft. by 1,099 ft.; depth of the entrance, 19½ ft.; depth of the Rhône, 14 to 24 ft.; depth at the quayside, 14½ ft.; length of quayage, 2,067 ft.

The port has 2 steam cranes to lift 1½ and 2 tons respectively; 1 fixed sheer legs to lift 60 tons; 2 floating steam cranes to lift 1½ and 6 tons. Anchorage in the Gulf of Foz is in from 7 to 20 metres (23 to 65 ft.).

Pilotage.—For vessels of 150 reg. tons, 13 fr. in and out; above 150 tons, 5 c. in and out for every additional ton. Night pilotage, double rates.

Port Charges.—Navigation and Sanitary Dues:—Same as in all French ports. **Custom House Clearance Fees:**—10 c. per ton. **Ballast:**—2 fr. per ton. **Fresh Water:**—3 fr. per ton. Bunker coal can easily be obtained. Provisions are plentiful. There are no local port charges.

Pro Forma Charges on a steamer of 1,506 net reg. tons, coming to St. Louis with about 3,000 tons of American phosphate:—

France—Port St. Louis du Rhône (*continued*).

	Fr.	c.
Pilotage in and out	80	80
Mooring and unmooring	30	00
Quay dues (beyond sea trade), 1 fr. per ton	1,506	00
Sanitary dues (beyond sea trade), 15 c. per ton	225	96
Stamp, manifest, and passport	10	00
Opening of hatches	10	00
Deposit of sea protest at Tribunal of Arles	60	00
Translation of same (deposit and translation are optional)	30	00
Telegrams, postage, and petty expenses	25	00
Clearing at Custom House, etc.	150	00
Extra time for Custom House (about)	50	00

2,177 70 = £86 8s. 2d.
PORT VENDRES.

Port Vendres is in lat. 42°29' N., long. 3°9' E.

Population.—About 3,400.

Export.—Iron ore.

Accommodation.—The port has two basins, with a total area of 15½ acres. The width at the entrance is 738 ft. and the depth at the entrance 31 ft. The total length of quayage is 3,902 ft. Vessels of from 426 ft. to 492 ft. in length can safely enter and leave this port. A special installation has been fitted for the loading of iron ore.

Old Basin.—Length, 656 ft.; mean width, 328 ft.; depth in the basin, 5 to 27¾ ft.; depth alongside the quays, 5 to 13 ft.

New Basin.—Length, 1,049 ft.; mean width, 459 ft.; depth in the basin, 29½ ft.; depth at quayside, 13 to 16½ ft. The quays in this basin are being lengthened.

Pilotage.—Steamers, 12½ c. per reg. ton, in and out; sailing vessels double rates.

Port Charges.—**Sanitary Dues and Navigation Dues:**—See **France**.

Clearance Fees:—Ore, 10 c. per ton of cargo; all other goods, 20 c. per ton of cargo.

POULIGUEN.

Pouliguen, or Le Pouliguen, in lat. 47°17' N., long. 2°29' W., is situated on the N.W. angle of a small bay, near the mouth of the river Loire.

Exports.—Potatoes, cattle, salt, etc.

Accommodation.—It is a tidal harbour, and only suitable for small craft of 11 ft. draught. The channel leading to the town, about a quarter of a mile long, dries at low water. Spring tides rise 13 ft., neaps 7 ft. Vessels should moor with chains, and heave as taut as possible.

Pilotage.—For a vessel of 50 reg. tons, 17s. 6d. There are no regular pilots here, but fishermen will act as such.

Port Charges.—**Ballast:**—10d. per ton. **Sanitary Dues and Passport:**—5 fr. for a vessel of 50 reg. tons.

QUILLEBŒUF.

Quillebœuf is in lat. 49°28' N., long. 0°32' E.

Population.—1,200.

France—Quillebœuf (*continued*).

Import.—Coal.

Export.—Potatoes.

Accommodation.—During spring tides, vessels drawing 24 ft. can ascend as far as this port. At low water vessels lie aground alongside the quay.

Pilotage.—All vessels are bound to take a pilot off Le Havre or Honfleur, as the navigation of the Seine is at all times difficult, and the banks and shoals are continually changing. For large vessels a steam-tug is almost indispensable. Rates, 4 c. per reg. ton. **Towage:**—20 c. per reg. ton up, and 75 c. down.

Port Charges.—**Quay and Sanitary Dues:**—See France. **Light Dues:**—15 c. per reg. ton. **Life-boat Dues:**—For British vessels in ballast from a French port, 3 c.; laden or in ballast, from the United Kingdom or British possessions in Europe, 5 c.; from a foreign port, 15 c. per reg. ton. United States vessels, 10 c. per reg. ton. **Ballast:**—1 fr. per ton. Other charges about the same as at Rouen.

QUIMPER.

Quimper, in lat. 48°0' N., long. 4°6' W., is situated on the Odet, about 11 miles from the sea, and 12½ miles N.N.E. of Pont l'Abbé.

Population.—19,000.

Imports.—Salt, coal, stones, charcoal, cement, phosphates, etc.

Exports.—Earthenware, leather, pilchards, provisions, wood, etc.

Accommodation.—Vessels of 250 tons can reach the town at spring tides; larger ones can anchor in Benodet Bay, off the mouth of the river, in 5 to 6 fathoms.

Pilotage.—Pilots can be obtained at Benodet.

REDON.

Redon, in lat. 47°40' N., long. 2°4' W., forms the point of junction of the two branches of the canal from Nantes to Brest.

Population.—7,000.

Import.—Coal.

Export.—Pit-props.

Accommodation.—Vessels of 200 tons burden and steamers of 300 tons can ascend here. The harbour is good and the tide rises 9 to 12 ft. Vessels drawing 13 ft. can come here at springs. The river La Vilaine forms the approach. There is a wet dock here 1,132 ft. long, 197 ft. wide, 32¾ ft. wide at entrance, entered by a lock 136 ft. long. There is a gridiron 157 ft. long, and 29 ft. wide.

Pilotage.—Pilots can always be obtained off Belle Ile.

Port Charges.—**Sanitary Dues:**—10 c. per reg. ton. **Quay Dues:**—50 c. per reg. ton. Vessels in ballast do not pay these dues. Labour, 3 fr. per day.

France—Redon (*continued*).

Pro Forma Charges on a vessel of 88 reg. tons, with a cargo inwards of 150 tons of coal, and outwards with 80 tons of pit-wood :—

Pilotage from Treguier to Roche Bernard	Fr.	c.
" " Roche Bernard to Redon .	21	85
Quay dues	44	00
Pilot boat	5	00
Tracking inwards.	8	00
Sanitary dues	8	80
Passport and manifest	7	00
Pilotage out.	54	31
Tracking outwards	16	00
Brokerage, in and out	20	0

193 46 = £7 13s. 6d.

ROCHEFORT.

Rochefort, in lat. 45°56' N., long. 0°59' W., stands on the right bank of the Charente, about 11 miles from its mouth.

Population.—36,694.

Imports.—Coal, phosphates, timber, sulphur ore, etc.

Exports.—Brandy, iron ore residues, pit-wood, artificial manure, etc.

Accommodation.—The river abreast of the town is about three-quarters of a cable wide, and there is a depth of from 21 to 25 ft. of water. There are 3 wet docks :—

No. 1 has a water area of $2\frac{3}{4}$ acres ; length of quayage, 1,486 ft. ; depth at spring tides, $22\frac{1}{2}$ ft. ; depth at neap tides, $17\frac{1}{2}$ ft.

No. 2 has a water area of 3 acres ; length of quayage, 1,556 ft. ; length of lock, 208 ft. ; width of lock, 46 ft. ; depth of water at spring tides, $22\frac{1}{2}$ ft. ; depth of water at neap tides, $17\frac{1}{2}$ ft. There are 4 cranes to lift $1\frac{1}{2}$ to 2 tons each.

No. 3, New Wet Dock, has a water area of $15\frac{1}{2}$ acres ; length of quayage, 3,692 ft. ; length of lock, 356 ft. ; width of lock, 60 ft. ; depth of water at spring tides, $29\frac{1}{2}$ ft. ; depth of water at neap tides, $25\frac{1}{2}$ ft. There is an inclined plane for landing timber, and 4 cranes to lift from $1\frac{1}{2}$ to 2 tons each.

There is an anchorage for timber-laden ships at La Cabane-Carrée and 10 private wharves for landing timber.

There are 4 dry docks, 3 of which belong to the Government. The dimensions are as follows :—

No. 1	is 188 feet long on the blocks, 51 feet wide at the entrance, and $10\frac{1}{2}$ feet on the sill.
" 2	" 246 " " " 47 " " " " " 16 $\frac{1}{2}$ " " "
" 3	" 369 $\frac{1}{2}$ " " " 68 $\frac{1}{2}$ " " " " " 25 $\frac{1}{2}$ " " "
Old	" 246 " " " 50 " " " " " 15 $\frac{1}{2}$ " " "

The width given is the high water ordinary spring level, and the depth on the sill is at high water ordinary springs.

There is a gridiron 120 ft. long, and 44 ft. wide.

A French Government dockyard is situated at Rochefort, where there are several building slips, and a sheer legs to raise 100 tons.

Time Signals.—Chronometers can be checked. A ball is hoisted on the St. Louis Tower 5 minutes before the signal. The ball is dropped at 10 h. 0 m. 0 s. a.m. Paris mean time, equal to 21 h. 50 m. 39 s. Greenwich mean time, and 21 h. 46 m. 48.7 s. local mean time.

Pilotage.—Compulsory.

France—Rochefort (*continued*).

FROM THE SEA TO ILE D'AIX.

	Fr.	c.
Vessels of 100 tons and under	22	00
" " 101 " to 150 tons	29	00
" " 151 " " 200 "	35	00
" " 201 " " 250 "	40	00
" " 251 " " 300 "	45	00
" " 301 " " 400 "	54	00
" " 401 " " 500 "	63	00
" " 501 " " 600 "	71	00
" " 601 " " 700 "	79	00
" " 701 " " 800 "	87	00
" " 801 " " 900 "	94	00
" " 901 " " 1,000 "	99	00
" over 1,000 tons 5 c. per ton.		

FROM ILE D'AIX TO ROCHEFORT.

Draught of Water.	From Ile d'Aix to Port-des- Barques.	From Port- des-Barques to Soubise.	From Soubise to l'Avant- Garde.	From l'Avant- Garde to the Docks or the Cabane-Carrée.
	Fr.	Fr.	Fr.	Fr.
Vessels drawing 2-60 m. and under .	12	12	10	5
From 2-61 m. to 2-95 m.	14	13	11	6
" 2-96 " " 3-24 "	16	15	12	6
" 3-25 " " 3-57 "	21	17	14	7
" 3-58 " " 3-90 "	23	20	16	8
" 3-91 " " 4-22 "	28	22	18	9
" 4-23 " " 4-55 "	33	25	21	11
" 4-56 " " 4-87 "	38	30	25	12
" 4-88 " " 5-19 "	43	36	28	14
" 5-20 " " 5-52 "	47	41	32	16
" 5-53 " " 5-84 "	53	47	37	18
" 5-85 " " 6-16 "	59	54	43	21
6-17 m. and above	76	62	50	25

Vessels in ballast pay half the above rates.

Vessels are considered loaded if carrying cargo amounting to more than one-quarter of their register tonnage.

Vessels towed pay half the rates between Rochefort and the sea. Steamers pay half the above rates except for pilotage from the Avant-Garde to the docks or the Cabane-Carrée, for which they pay the same price as sailing vessels.

Port Charges.—Towage:—75 c. per reg. ton from Aix Roads to Rochefort or Charente; 1 fr. for vessels coming up laden, and down in ballast; 1 fr. 25 c. with cargoes both up and down. **Tonnage Dues:** 25 c. per reg. ton. **Navigation Dues:**—Entering and clearing in ballast, nil; entering or clearing with full or part cargo, 50 c. per reg. ton. **Sanitary Fees:**—10 c. per reg. ton. **Brokerage:**—50 c. per ton corn, wood, etc., delivered; 25 c. per ton delivered phosphates, ore, etc.; 15 c. per ton delivered coal.

Pro Forma Charges, on a steamer of 1,000 reg. tons, from the United Kingdom, with a cargo of 2,600 tons of coal in, and ballast out:—

	Fr.	c.
Pilotage from the sea to Rochefort	142	00
Haulers and boat assisting into dock	20	00
Quay dues and passport	502	00
Town dues	250	25
Sanitary dues	100	00
Consular fees	3	20

Carried forward 1,017 45

France—Rochefort (*continued*).

	Fr.	c.
Brought forward	1,017	45
Water supply	20	25
Lifeboat society	2	00
Labourage, discharging cargo, 1 fr. per ton	2,600	00
Haulers and boat assisting out of dock	16	00
Pilotage out of dock and down to the sea	93	00
Brokerage, 15 c. per ton of coal delivered	390	00

4,138 70 = £164 4s. 3d

ROSCOFF.

Roscoff is in lat. 48°43' N., long. 3°59' W.

Population.—About 5,000.

Imports.—Coal and wood.

Exports.—Fruit, vegetables, and fish.

Accommodation.—The harbour of Roscoff is formed by a mole, 984 ft. long, which serves as a quay. The harbour is under the eastern end of Ile de Bas, and, as it dries at low water, is only frequented by coasters. Springs rise 23 ft., neaps 17 ft., and mean neaps range 11 ft. The trade is carried on in vessels up to 200 tons. Vessels up to 12 ft. draught can come here at high water springs, and 5 or 6 ft. draught at neaps. There is a crane to lift 1 ton.

Pilotage.—As the entrance is encumbered with rocks and shoals, strangers should employ a pilot. Sailing vessels, in and out—21 c. per reg. ton loaded; in ballast, 14 c. Steamers—15 fr. inwards, and 15 fr. outwards.

Port Charges.—**Quay Dues**:—50 c. per reg. ton. **Sanitary Dues**: 10 c. per reg. ton. **Shipbroker**:—Clearance, 5 fr.

ROUEN.

Rouen, in lat. 49°27' N., long. 1°6' E., is situated on the river Seine, about 56 miles from the sea.

Population.—118,459.

Imports.—Coal, petroleum, cellulose pulp, wood, flax, hemp, fruit, grain, flour, iron, steel, pyrites, phosphates, timber, wine.

Exports.—Condensed milk, empty casks, iron, steel, malt, plaster, sand (glass), sugar.

Accommodation.—The anchorage, at the entrance to the port, has a depth, at low water neaps, of 23½ ft. and, at low water springs, of 21¼ ft. In the tidal harbour the depth of water, at high tide ordinary springs, is 28 ft., and at low water ordinary springs, 21 ft. There are 3 basins, as follows:—

Bassin aux Bois.—The water area is 14¾ acres; length, 1,990 ft.; width, 360 ft.; length of quays, 3,300 ft.; depth at low water, spring tides, 21 ft. There are 9 jetties.

Bassin aux Pétroles.—The water area is 29½ acres; length, 4,590 ft.; width, 328 ft.; length of quays, 3,300 ft.; depth of water at low spring tides, 22 ft. There are 8 jetties.

Bassin Principal.—The water area is 7 acres; length, 7,546 ft.; width (mean), 557 ft.; length of quays, 13,930 ft.; at the quay side, at low water springs—10,080 ft. have a depth of 19 ft.; 2,980 ft. have a depth of 21 ft.; and 870 ft. have a depth of 27 ft.

France—Rouen (continued).

At Rouen there are 30 hydraulic cranes to lift $1\frac{1}{4}$ tons, 2 hydraulic cranes to lift $2\frac{1}{2}$ tons, 40 floating cranes to lift $1\frac{1}{4}$ tons, 1 steam crane to lift 10 tons, 1 electric crane to lift 30 tons, and 1 hand crane to lift 10 tons.

Twenty small lights have been placed on both banks of the river. Steam-tugs are always to be had in Havre roads; they tow vessels to Rouen in eight hours. A manifest of the cargo and ship's stores, signed by the captain, must be ready on arrival, and exhibited to and signed by the Custom House officers before being taken ashore.

Pilotage.—The Seine pilots have boats of their own, and, at whatever distance they may be met, captains must not refuse their services, otherwise they expose themselves to paying double pilotage. Distance does not increase the pilot's fee, and it can never be higher than if taken in Havre outer roads.

Port Charges.—Quay Dues and Sanitary Dues:—See France.

Towage:—Sailing vessels.—Up, 2 fr. per ton of cargo (half of which is paid by the vessel); down, 75 c. per reg. ton. **Stevedore:**—Grain, 55 c. per ton; coal, 1 fr. per ton; wine, 1 fr. 20 c. per 1,000 litres landed on the quay.

Brokerage:—Vessels entering.—Steamers carrying cargoes consisting entirely, or over nine-tenths, of coal, pig-iron, iron ore, rock salt, ice, china clay, and feldspar, 15 c. per ton cargo up to 1,000 tons; 10 c. from 1,001 to 1,500 tons; 5 c. over 1,500 tons. Sailing vessels carrying cargoes consisting entirely, or over nine-tenths, of coal, pig-iron, iron ore, rock salt, ice, china clay, and feldspar, 25 c. per ton cargo up to 1,000 tons; 20 c. from 1,001 to 1,500 tons; 10 c. over 1,500 tons. Steamers or sailing vessels carrying cargoes consisting entirely, or over nine-tenths, of iron, timber, manure, grain, and seeds, 40 c. per ton cargo up to 1,000 tons; 30 c. from 1,001 to 1,500 tons; 15 c. over 1,500 tons. Steamers or sailing vessels carrying other cargoes, 50 c. per ton of cargo up to 1,000 tons; 30 c. from 1,001 to 1,500 tons; 15 c. over 1,500 tons. Vessels leaving:—Steamers or sailing vessels leaving loaded, entirely or partly, 25 c. per ton of cargo.

Chartering.—By charter-party on the value of the freight, 2 per cent.

Collecting Freight.—2 per cent., half to be paid by freighter, and half by consignee.

Translating.—An ordinary bill of lading, 3 fr.; an extraordinary ditto, 5 fr.; a protest, 5 fr.; bill of exchange, 3 fr.; legal documents, first page, 4 fr.; following pages, 3 fr.

Pro Forma Charges on a British steamer of 2,564 reg. tons, coming from American port with a cargo of 5,235 tons of petroleum oil:—

	Fr.	c.
Pilotage from sea to Villequier	847	70
„ „ Villequier to Rouen	192	70
„ „ Rouen to Villequier	192	70
„ „ Villequier to sea	568	00
„ in harbour	26	50
Quay dues	2,564	00
Salvage dues	307	70
Sanitary dues	384	50
Chamber of Commerce)		
Harbour dues)	1,794	20
Passport	2	20
Mooring dues	384	50
Boatmen, day 30 fr. in, 30 fr. out (night, 35 fr.)	60	00
Towage coming up the river and in petroleum dock (about)	525	00
„ for swinging out	200	00
Noting protest, if necessary	10	45

Carried forward 8,060 15

France—Rouen (*continued*).

	Fr.	c.
Brought forward	8,060	15
Consular charges		3 20
Fireguards (7 fr. per night, 6 fr. per day)	(say about)	60 00
Petty expenses	(about)	12 50
Postage		3 50
Telegrams, telephone		12 00
Telephone from Radicateel and Semaphore		4 00
Brokerage	1,421	30
Lifeboat fund	5	00

 9,581 65 = £380 3s. 5d.
SABLES D'OLONNE.

The harbour of Olonne, in lat. 46°30' N., long. 1°50' W., is situated between two small towns, one called Les Sables d'Olonne and the other La Chaume.

Population.—12,500.

Imports.—Coal, wood, petroleum, slags, pitch, and phosphates.

Exports.—Cereals, salt, potatoes, pit-wood, iron ore, etc.

Accommodation.—Olonne is a tidal harbour, and vessels can only enter at high water.

Signals for entering are a white flag, with a blue cross-bar and a blue pennant. When the pennant is above the flag, the tide is running in; when below, running out. At high water the flag only is hoisted. At high water on the bar there is 16 ft.; at the end of the port, 11 ft.; low water, 8 ft. There is a dock here 935 ft. long, 443 ft. wide, entrance 54 ft. wide; depth of water over the sill at high water, spring tides, 15½ ft. There are 2 gridirons, one 213 ft. long and 33 ft. wide, and the other 65 ft. long and 33 ft. wide. There are 2 patent slips, 171 ft. cradle, and 82 ft. wide.

Pilotage.—Pilotage is paid on the registered tonnage. **Sailing**

Vessels:—Up to and including 100 tons, 46 fr.; 101 to 150 tons, 53 fr.; 151 to 200 tons, 60 fr.; 201 to 250 tons, 67 fr.; 251 to 300 tons, 74 fr.; 301 to 400 tons, 88 fr.; 401 to 500 tons, 101 fr.; 501 to 600 tons, 114 fr.; 601 to 700 tons, 126 fr.; 701 to 800 tons, 138 fr.; 801 to 900 tons, 150 fr.; 901 to 1,000 tons, 162 fr. Over 1,000 tons, 10 c. per reg. ton extra; 25 per cent. in addition from October 1 to March 31. **Steamers** pay only half the above rates. Assistance in the harbour, 10 fr.

Port Charges.—Sanitary Dues:—10 c. per ton register. **Haulers:**—30 c. per hour in the day-time; at night, 50 c. **Ballast:**—1 fr. per ton.

ST. BRIEUC.

St. Brieuc, in lat. 48°31' N., long. 2°46' W., is situated on the right bank of the river Gouet, about 2½ miles from its mouth. Ligué, about 1 mile from the mouth of the river, is the port of entry.

Population.—22,000.

Imports.—Coal, wood, pig-iron, cement, slags.

Exports.—Grain, buck-wheat, potatoes, rags, pit-wood.

Accommodation.—This port is at all times difficult of access, and vessels entering should always have an anchor ready to let go astern. Strangers should not attempt to enter without a pilot. At night vessels can anchor about three miles off the shore.

In the tidal harbour there is 5,577 ft. of quayage. At low water the

France—St. Brieuc (continued).

harbour is dry, but at high ordinary springs there is 18 ft. of water. There is a crane to lift 1 ton.

The wet dock is 2,033 ft. long and contains 1,145 ft. of quayage. The lock is 196 ft. long, 46 ft. wide at the entrance, and with 23 ft. over the sill at ordinary springs. There is a steam crane to lift 2 tons. Railway trucks come alongside the berths, which are all situated on the S. and W. sides. With a head wind, haulers must be employed. There are 2 careening slips, one 230 ft. long and 164 ft. wide, and the other 131 ft. long and 98 ft. wide.

Weekly steamship communication with Jersey, Guernsey, and Plymouth. A tugboat is shortly to be stationed here.

The time allowed for loading and discharging operations is as follows :—

Vessels under 50 tons	10 days.
„ from 50 to 100 tons	15 „
„ „ 101 „ 200 „	20 „
„ „ 201 „ 300 „	25 „
„ „ 301 „ 400 „	30 „
„ over 400 tons	35 „

Pilotage.—Entrance and clearance in all seasons :—

French Sailing Vessels and Foreign Assimilated Vessels.	* 1st Distance.	2nd Distance.	3rd Distance.
	To the Roadstead of the St. Quay Islands, and vice versa.		
	Fr.	Fr.	Fr.
Under 80 tons	7	9	12
From 80 to 99 tons	8	10	13
„ 100 „ 149 „	9	12	15
„ 150 „ 199 „	10	13	16
„ 200 „ 249 „	12	15	18
250 tons and over	15	18	21

* 1st Distance.—From the stone La Madin, or across from Dahouet, at anchor.

2nd distance.—From the Mauve cliff, or the Rohein cliff, at anchor.

3rd distance.—From the headland of Minar, or from the line leading from Cape Erqui to Grand-Lejon, at anchor.

FROM THE ROADSTEAD OF THE ST. QUAY ISLANDS.

	To the ports of Binic or Pontrieux or to the headland of Roselier, and vice versa.	To Dahouet or Erqui and vice versa.
Under 80 tons	7 fr. ..	13 fr.
From 80 to 99 tons	8 „ ..	14 „
„ 100 „ 149 „	9 „ ..	15 „
„ 150 „ 199 „	10 „ ..	16 „
„ 200 „ 249 „	12 „ ..	18 „
250 tons and over	15 „ ..	21 „

In the event of the vessel entering direct, without anchoring in the roadstead, pilotage is paid as per following :—

Distances.	Under 80 Tons.	From 80 to 99 Tons.	From 100 to 149 Tons.	From 150 to 199 Tons.	From 200 to 249 Tons.	250 Ton and over.
For the first distance (the vessel coasting along the mainland or in the offing of the St. Quay Islands) :—						
To Pontrieux or Binic, to or athwart of the point of Roselier	14	16	18	20	24	30
To Dahouet or Erqui, for vessels coming from the W. . .	20	22	24	26	30	46
For the second distance :—						
To Pontrieux or Binic, to or athwart the point of Roselier	16	18	21	23	27	33

France—St. Brieuc (*continued*).

Distances.	Under 80 Tons.	From 80 to 99 Tons.	From 100 to 149 Tons.	From 150 to 199 Tons.	From 200 to 249 Tons.	250 Tons and over.
For the second distance (<i>continued</i>)—						
To Dahouet or Erqui for ves- sels coming from the W. . .	22	24	27	29	33	39
To Dahouet for vessels coming from the E.	8	9	10	11	12	13
For the third distance :—						
To Pontrieux or Binic, to or athwart the point of Roselier	19	21	24	26	30	36
To Dahouet or Erqui, for ves- sels coming from the W. . .	5	27	30	32	36	42
To Dahouet, for vessels coming from the E.	15	16	18	19	21	24
To Erqui, for vessels coming from the E., if they are taken eastward of the Com- tesses.	6	6	6	6	6	6

Note.—If the vessel is taken westward of the Comtesses she is considered as coming from the W., and pays at the rate of distances or fraction of distance.

PILOTAGE AT LÉGUÉ.
(Entrance and Clearance in all Seasons.)

French Sailing Vessels and Assimilated Foreign Vessels.	From the Point of Roselier.	
	To the Ports of Dahouet and Erqui and vice versa, besides the distances gone over.	Moored at La Tour.
	Fr.	Fr. c.
100 to 149 tons	6	2 50
150 „ 199 „	6	4 00
200 „ 249 „	6	4 50
250 tons and over	6	5 00

From the mooring at La
Tour to Légué.

	Fr. c.
100 to 149 tons	3 50
150 to 199	4 00
200 to 249	4 50
250 tons and over	5 00

The vessel is considered to be moored at La Tour when the point of Roselier is closed by the point of Aigle. River pilotage at Légué is compulsory for all vessels measuring more than 80 tons and for all steam-boats with a tonnage of over 100 tons.

Port Charges :—Dock Dues.—French or foreign vessels entering with cargo, or for the purpose of taking cargo, 40 c. per reg. ton.
Brokerage :—50 c. per ton. It is generally stipulated that for foreign vessels this brokerage shall be calculated on operations effected and not on the gross tonnage of the goods delivered.

Pro Forma Charges on a vessel of 171 tons register, with a cargo of 512 tons of coal :—

	Fr. c.
Pilotage in and tide for the pilot	17 00
„ out	17 00
Dock dues at 40 c. per ton	68 40
Boatman	15 00
Customs' clearance	12 00
Quay dues and passport, 50 c. per ton	88 20
Brokerage, 50 c. per ton	256 00
Sanitary dues, 10 c. per ton	17 10
Consul.	3 15

493 85 = £19 12s. 6d.

France.

ST. JEAN DE LUZ.

St. Jean de Luz, in lat. $43^{\circ}24'$ N., long. $1^{\circ}43'$ W., is a small seaport on the right bank of the river Nivelle, about 10 miles S.W. of the river Adour.

Population.—About 4,500.

Accommodation.—The bay affords anchorage in 3 to 6 fathoms of water, but is exposed to the northward. The anchorage behind the middle breakwater is quite safe in the strongest gales. The bar at the entrance of the river is exposed 2 ft. at low springs, at which period there is not more than 3 ft. between the quays. Springs rise $12\frac{1}{4}$ ft.; neaps, 8 ft. On the western side of the bay is the small tidal harbour of Socoa, enclosed within piers. With a smooth sea the harbour will admit vessels of $11\frac{1}{2}$ ft. draught at springs, and $8\frac{1}{2}$ ft. draught at neaps. A red or tricoloured flag indicates that a vessel can enter; when it is hauled down, and a flag hoisted on the end of the jetty, the vessel should anchor.

ST. MALO AND ST. SERVAN.

The town of St. Malo, in lat. $48^{\circ}39'$ N., long. $2^{\circ}1'$ W., is built on the small rocky island of Aaron, and communicates with the mainland by means of a causeway, named Le Sillon, three-quarters of a mile long and 90 yds. wide, which is defended from the violence of the waves by strong outworks. St. Servan, in lat. $48^{\circ}38'$ N., long. $2^{\circ}0'$ W., stands at the mouth of the Rance, close to St. Malo, with which there is communication by bridge.

Population.—St. Malo and St. Servan, 24,000.

Imports.—Codfish, oil, timber, coal, hemp, ice, etc.

Exports.—Corn, fruit, wine, brandy, salt, cider, butter, fish, potatoes, rye-grass seed, eggs, slates, and rags.

Accommodation.—St. Malo tidal harbour has 2,132 ft. of quayage and a depth of 33 ft. at high water; *nil* at low. There are 8 cranes to lift from 1 to 3 tons, and 5 staithes for the shipment of coal from 25 to 40 tons per hour. The inner harbour is 2,952 ft. long, 460 ft. wide, and has 6,689 ft. of quayage. The lock is $298\frac{1}{2}$ ft. long, 59 ft. wide at the entrance, and with a depth on the sill, at high water ordinary springs, of 23 ft. There is a hand crane to lift 20 tons.

St. Servan tidal harbour has 328 ft. of quayage and a depth of 33 ft. at high water springs; $16\frac{1}{2}$ ft. at low water neaps. The inner harbour is 1,968 ft. long, 656 ft. wide, and has 3,281 ft. of quayage. The length of the lock is 328 ft.; width of the entrance, 59 ft.; and $21\frac{1}{2}$ ft. on the sill at ordinary high water springs.

The tidal harbours are secure with excellent grounding on a bed of mud. The bridges, dock gates, and sluices are worked by hydraulic machinery. There is a gridiron to take vessels up to 170 ft. long, by 40 ft. beam, at St. Servan, and a smaller one at St. Malo. Ships' stores and provisions are easily obtained. The roadstead is very good, with safe anchorage, and during stormy weather vessels may take refuge within the mouth of the river Rance.

The London and South-Western Railway Company run a regular service of steamers for passengers and merchandise between Southampton and St. Malo, and between Jersey and St. Malo. They berth in the tidal harbour.

France—St. Malo and St. Servan (continued).

Pilotage.—Steamers, inwards, 0.215 fr. per reg. ton; outwards, 20 c. per reg. ton; sailing vessels, inwards, 43 c. per reg. ton; outwards, 41 c. per reg. ton; plus 3 per cent. for the pilot major, for both steamer and sailer.

Port Charges.—**Manifests:**—In and out, 2 fr. 50 c. **Quarantine Dues:**—Home trade, 10 c. per reg. ton; foreign trade, 19 c. per reg. ton, plus stamp. **Haulers:**—Inwards, 3 c. per reg. ton; outwards, 3 c. per reg. ton; after 8 p.m. and before 6 a.m., 50 fr. minimum. **Help Boat:**—According to agreement, about 25 fr. in and out. **English Consul:**—3 fr. 15 c. **Fresh Water:**—6 fr. per 1,000 litres. **Ballast:**—Sold by vessel, 1 fr. 25 c. per ton; bought by vessel, 1 fr. 25 c. to 1 fr. 40 c. **Permit for Stores and Demand of Clearance:**—3 fr. 60 c. **Customs' Clearance:**—12 fr. **Tonnage Dues:**—90 c. per reg. ton, plus stamp. **Passport:**—1 fr. 95 c. **Towage:**—No fixed rate; on ballast about 25 c. per reg. ton; with cargo about 35 c. per reg. ton. **Protest:**—10 fr. 30 c. **Stevedore:**—1 fr. per ton of coal; grain, 60 c. to 70 c.; coke, 1 fr. 60 c.; timber, 2 fr. 90 c. per St. Petersburg standard. **Dock Dues:**—45 c. per reg. ton, plus stamp. Gridiron, 20 c. per reg. ton for the two first days, 10 c. per reg. ton for each following day.

BROKERAGE (Decree of June 24, 1893).

(The charges are made up of a fixed sum plus a proportional amount.)

SAILING VESSELS.	Fixed sum.	Proportional sum.		
		From 1 to 500 tons.	From 501 to 1,000 tons.	Over 1,000 tons.
Entered in ballast	12 fr.	.. none	.. none	.. none
Cleared " " " " " " " " " "	12 fr.	.. none	.. none	.. none
" " " " when entered with cargo	none	.. none	.. none	.. none
Per ton of cargo.				
Entered with full or part cargo	12 fr.	.. 50 c.	.. 40 c.	.. 35 c.
Cleared " " " " " " " " " "	12 fr.	.. 25 c.	.. 20 c.	.. 15 c.
STEAMERS.				
Per horse-power.				
Entered in ballast with passengers	12 fr.	.. ..	.. 25 c. (max. 30 fr.)	
" " " " without " " " " " "	12 fr.	.. ..	.. none	
Cleared " " " " without " " " " " "	12 fr.	.. ..	.. none	
" " " " with " " " " " "	12 fr.	.. ..	.. 25 c. (max. 30 fr.)	
Per ton of cargo.				
Entered with full or part cargo of coal, cast-iron, ores and pitch	12 fr.	.. 20 c.	.. 17½ c.	.. 15 c.
Entered with full or part cargo of other goods	12 fr.	.. 50 c.	.. 40 c.	.. 30 c.
Cleared with full or part cargo	12 fr.	.. 25 c.	.. 20 c.	.. 15 c.

ST. MARTIN (Île de Ré).

St. Martin, in lat. 46°12' N., long. 1°20' W., is situated almost in the centre of the island of Ré, on the northern shore.

Population.—2,500.

Exports.—Wine, brandy, salt, etc.

Accommodation.—It is commodious, and has a safe outer roadstead, where there is anchorage in 2 to 3 fathoms. This port is chiefly frequented by vessels of about 100 reg. tons. The area of the basin is 3 acres; length of quayage, 1,883 ft.; width of entrance, 39.4 ft.; depth on the sill, at ordinary spring tides, 17.1 ft. The tidal harbour is 2½ acres in extent; length of quayage, 695 ft.; depth at high tide, 17.4 ft.; depth at low water, *nil*. The gridiron is 170 ft. long, and 36 ft. wide. There is a heaving-down slip 164 ft. long, and 131 ft. wide.

ST. NAZAIRE.

St. Nazaire, in lat. 47°17' N., long. 2°15' W., is situated on the N. side of the mouth of the river Loire.

France—St. Nazaire (*continued*).

Population.—35,762.

Imports.—Minerals, sugar, rice, coffee, logwood, timber, guano, coal, grain, and pitch.

Exports.—Wine, brandy, sardines, eggs, butter, dried fruits, sugar, coal, agricultural products, and Paris goods.

Accommodation.—In the roadstead there is a minimum depth of 32 ft. 10 in. at low water.

The Entrance Channel is 32 ft. 10 in. deep at high water springs, and 16 ft. 5 in. at low water neaps. A new entrance to the harbour of St. Nazaire, direct from the sea, has been recently opened.

New Outer Harbour.—Water area, $19\frac{1}{2}$ acres; length, 1,627 ft.; width of entrance, between the jetties, 406 ft.; depth at ordinary high water, 36 ft. 1 in.; ordinary low water, 23 ft.; low water, lowest neaps, 26 ft. 3 in.

Tidal Wharf of New Outer Harbour.—Length of available quayage, 492 ft.; breadth of wharf in use, 82 ft.; length of bed dry at the foot of the quay, 689 ft.; width of the bed dry at the foot of the quay, 98 ft. 5 in.; depth in this bed at ordinary high water, 42 ft. 8 in.; depth in this bed at ordinary low water, $29\frac{1}{2}$ ft.

New Entrance Lock (from New Outer Harbour into the Vieux Bassin de St. Nazaire).—Effective length: Large lock, 692 ft.; medium lock, 381 ft. 5 in.; small lock, 252 ft. 7 in. Width of lock, 98 ft. 5 in.; depth at ordinary high water, 36 ft. 1 in.; depth at ordinary low water, 23 ft. The entrance into New Outer Harbour, which is itself direct from the sea, the New Lock leading from the Outer Harbour into the Vieux Bassin de St. Nazaire, and the lock from the Vieux Bassin into the Bassin de Penhoët, are all in a direct line. In addition to the Tidal Wharf, there is an embankment area around the New Outer Harbour of 3.67 acres, of which 2.81 acres are available for depositing goods.

Tidal Harbour.—Length of quayage, 328 ft.; depth alongside at high water springs, 13 ft. 1 in.

Vieux Bassin de St. Nazaire.—Water area, 26 acres; length of dock, 1,903 ft.; width of dock, average, 525 ft.; length of quayage, 5,180 ft.; depth on the sill, at ordinary high water, (small) 22 ft. 4 in., (large) 26 ft. 3 in.; width of entrances, (small) 43 ft., (large) 82 ft. The small entrance is by a lock, 197 ft. long. The large entrance is by a single gate. An area of $8\frac{2}{3}$ acres and a length of quayage of 1,876 ft. is reserved for the National Navy Department and the Cie. Gen. Transatlantique. There are sheers to lift 40 tons; a crane to lift 10 tons; also 3 small cranes.

Bassin de Penhoët (entered from Bassin de St. Nazaire).—Water area, $55\frac{1}{2}$ acres; length of dock, 3,609 ft.; width of dock, 525 to 755 ft.; length of quayage for large vessels, 6,939 ft.; length of inclined quayage, 748 ft.; length of quayage for barges, 1,272 ft.; length of quayage at the entrance to the dry docks, 571 ft.; length of lock, 459 ft. 4 in.; width of lock, 82 ft.; depth on the sill at high water, highest springs, 30 ft. 6 in.

There is 1 floating sheers to lift 30 tons, belonging to the Cie. Gen. Transatlantique. There are 2 sheers to lift 80 tons each, and 34 cranes.

There are 3 dry docks:—

No. 1 is 631 ft. long, 65 ft. wide on the sill, and 28 ft. deep on the sill at high ordinary springs.

" 2 "	418 "	" 32 "	" "	" "	18 "	" "	" "	" "	" "
" 3 "	557 "	" 46 "	" "	" "	28 "	" "	" "	" "	" "

The length given is the available docking length at the coping level.

France—St. Nazaire (*continued*).

There are 3 shipbuilding yards at this port, where vessels can be repaired; there is also a powerful electric derrick capable of lifting 150 tons, suitable for shipping boilers and machinery.

Port Regulations.—Steamships should stop their engines in time to have their course completely checked before approaching the sluices. The officer of the port will decide if they can go through sailing gently, or be hauled through. The signal-mast on the S. jetty indicates, as follows the opening of the basins :—

- (a) A white flag, with black cross, surmounted by a black ball, signifies that the tide is rising.
- (b) The same flag alone, that the little lock is open.
- (c) The same flag, surmounted by the national flag, that the great lock is open.
- (d) The same flag, surmounting the black ball, signifies that the tide is falling.
- (e) A red ball, that the basin is closed; the channel is forbidden.

Masters must report their vessels at the Sanitary Office, on the N. pier-head, before they enter the dock; and no vessels are allowed to enter between the piers while the red ball is hoisted at the pier-head.

Pilotage.—The pilotage limits are divided into distances :—

From Belle Isle to { N. of the Four Light
La Banche
Le Pillier } 4 distances.

From { N. of the Four Light
La Banche
Le Pillier } to Les Charpentiers, 2 distances.

From Les Charpentiers to Bonne Anse, 1 distance.

From Bonne Anse to St. Nazaire roads, 1 distance.

The extreme limit of the St. Nazaire pilotage is one distance, or 9 mile beyond Belle Ile. Vessels, however, are obliged by law to receive a pilot from the first boat belonging to the station they may fall in with, no matter how far she may be from the port, but no extra pilotage can be claimed for any distance outside of the limits.

PILOTAGE TARIFF.

Tonnage.			Tonnage.			Tonnage.		
Per Distance.			Per Distance.			Per Distance.		
Tons	Inwards.	Outwards.	Tons	Inwards.	Outwards.	Tons	Inwards.	Outwards.
Reg.	Fr. c.	Fr. c.	Reg.	Fr. c.	Fr. c.	Reg.	Fr. c.	Fr. c.
80	7 78	7 00	330	25 10	13 25	580	38 80	19 50
90	8 48	7 25	340	25 79	13 50	590	39 22	19 75
100	9 17	7 50	350	26 48	13 75	600	39 64	20 00
110	9 85	7 75	360	27 17	14 00	610	39 92	20 25
120	10 56	8 00	370	27 86	14 25	620	40 20	20 50
130	11 28	8 25	380	28 55	14 50	630	40 48	20 75
140	11 93	8 50	390	29 25	14 75	640	40 76	21 00
150	12 67	8 75	400	29 95	15 00	650	41 04	21 25
160	13 33	9 00	410	30 40	15 25	660	41 32	21 50
170	14 03	9 25	420	30 96	15 50	670	41 60	21 75
180	14 73	9 50	430	31 52	15 75	680	41 88	22 00
190	15 41	9 75	440	32 08	16 00	690	42 16	22 25
200	16 13	10 00	450	32 64	16 25	700	42 44	22 50
210	16 82	10 25	460	33 20	16 50	710	42 72	22 75
220	17 41	10 50	470	33 76	16 75	720	43 00	23 00
230	18 10	10 75	480	34 32	17 00	730	43 28	23 25
240	18 89	11 00	490	34 88	17 25	740	43 56	23 50
250	19 59	11 25	500	35 44	17 50	750	43 78	23 75
260	20 28	11 50	510	35 86	17 75	760	44 06	24 00
270	20 87	11 75	520	36 28	18 00	770	44 34	24 25
280	21 56	12 00	530	36 70	18 25	780	44 62	24 50
290	22 25	12 25	540	37 12	18 50	790	44 90	24 75
300	23 03	12 50	550	37 54	18 75	800	45 18	25 00
310	23 72	12 75	560	37 96	19 00			
320	24 41	13 00	570	38 38	19 25			

France—St. Nazaire (*continued*).

Vessels of more than 800 tons pay in addition to the foregoing tariff, 1 fr. 11 c. for every 10 tons register additional, for the eight distances inwards, and 1 fr. per 10 tons additional outwards. Steamers pay half pilotage.

Shifting anchorage in the outer roads, or entering or leaving the dock :—

	Fr.
151 to 300 tons	15
301 „ 450 „	20
451 „ 600 „	25
601 „ 750 „	30
751 „ 900 „	35

TOWAGE.

	Fr.
From the dock to the Roads, from 150 tons reg. to 200	50
„ „ „ „ „ 201 „ „ 300	60
„ „ „ „ „ 301 „ „ 400	70
„ „ „ „ „ 401 „ „ 500	80

For every reg. ton over 500, 25 c.

	Fr.
From St. Nazaire Roads to Les Charpentiers, La Branche, or Le Pillier, and vice versâ	225
150 tons to 200	250
201 „ 250	275
251 „ 300	300
301 „ 350	

For every ton over 350 tons, 70 c.

	Fr.	c.
From St. Nazaire to Paimbœuf, and vice versâ	0	50 per ton of cargo.
„ „ to Nantes	1	50 „
„ Paimbœuf „	1	25 „
„ Pelerin „	0	90 „

Two-thirds of the towage is paid by the consignee when the vessel is bound to Nantes.

Port Charges.—Sanitary Dues :—Vessels from ports in Europe, 10 c. per reg. ton ; from ports out of Europe, 15 c. per reg. ton. **Quay Dues :**—For vessels from ports in Europe, 50 c. per reg. ton ; from ports out of Europe, 1 fr. per reg. ton. **Passport :**—1 fr. 95 c. per vessel. **Local Tax :**—75 c. per reg. ton. **Stamps,** 1 fr. 20 c. per vessel. **Hawser Dues** (compulsory for sailing vessels of 100 reg. tons and upwards) :—0.44 c. per reg. ton. **Haulers** for sailing vessels, 1 fr. per man. **Boat :**—Outside of dock gates—sailing vessels, 8 fr. per 2 hours ; inside dock, 6 fr. per 2 hours. **Ballast :**—Fresh-water sand, 2 fr. 50 c. per ton. **Weighing Cargo** (by sworn weighers) :—25 c. per ton, half of which is paid by the consignee. **Dry Dock Dues :**—Dock No. 2 : Pumping out the dock, and shoring up vessels, 102 fr. 40 c. Dock hire per day for vessels of 1,000 tons, 39 fr. 68 c. ; dock hire, per day for every ton over 1,000 tons, .128 c. Docks Nos. 1 and 3 : Pumping out the dock and shoring up vessels, 240 fr. ; dock hire per day for vessels of 1,000 tons, 76 fr. 80 c. ; dock hire per day for every ton over 1,000 tons, .128 c.

Pro Forma Charges on a sailing vessel of 2,400 net reg. tons, coming from an extra-European port, with a cargo of 4,000 tons :—

	Fr.	c.
Pilotage from sea to St. Nazaire	699	50
Hauling vessel in docks and harbour boats (about)	100	00
Quarantine dues	360	00
Tonnage duty and passport	2,402	20
Dock dues	1,800	10
Protest at the tribunal (about)	20	00
Sea report at Custom House	6	00
Sweeping quay	2	00
Stamping of bill of lading (each)	1	20

Carried forward 5,391 00

France—St. Nazaire (*continued*).

	Fr.	c.
Brought forward	5,391	00
English consular fees	3	20
Brokerage on inward cargo :		
1,000 tons at 50 c. per ton	500	
500 " " 40 c. " "	200	
2,500 " " 25 c. " "	625	
	1,325	00
Hauling vessel out of docks and harbour boats	(about)	80 00
Pilotage from St. Nazaire to sea		345 10
Lifeboat (not compulsory)		5 00
Survey on cargo and tribunal expenses	(about)	130 00

7,279 30 = £288 16s. 3d.

ST. RAPHAEL.

St. Raphael, in lat. 43°25' N., long. 6°47' E., is situated at the head of the Gulf of Fréjus.

Accommodation.—The port is formed by a mole 230 ft. long, but the anchorage inside has silted up, so that only very small vessels can use it. Large vessels anchor in the roads in 8 to 9 fathoms, 1½ cables from the pier. Although exposed to the S., the holding ground is good.

The authorities have begun to reconstruct the jetty and quays. The work is progressing very slowly, and the port will not be able to accommodate large vessels for at least three years.

ST. SERVAN.

(See **St. Malo and St. Servan**, p. 183.)

ST. VAAST.

St. Vaast-la-Hougue, in lat. 49°35' N., long. 1°15' W., is about 6½ miles S. of Cape Barfleur.

Population.—About 3,000.

Imports.—Coal, wood, and manure.

Exports.—Potatoes, carrots, stone, butter, and pitwood.

Accommodation.—The roadstead affords good holding ground for the largest vessels. The entrance is a mile wide, with a channel 131 ft. wide, 1,640 ft. long, and 16½ ft. deep at high springs. The tidal harbour is dry at low water, and vessels rest on a flat bottom, covered with 12 to 16 in. of mud, at the quayside. The length of quayage is 1,410 ft. and there is a depth alongside of 15 ft. at high water springs, and 10 ft. at high water neaps. In the port vessels are sheltered from all winds.

Pilotage.—15 c. per reg. ton loaded ; 10 c. per reg. ton in ballast.

Port Charges.—**Port Dues** :—60 c. per reg. ton. **Clearance** :—50 c. per ton. **Commission on Freight** :—2 per cent. **Loading or Discharging** :—1 fr. per ton. **Ballast** :—1 fr. per ton.

ST. VALERY-EN-CAUX.

St. Valery-en-Caux is in lat. 49°52' N., long. 0°42' E.

Population.—4,000.

Imports.—Timber, dried fish, etc.

Accommodation.—There is a tidal harbour, 3½ acres in area, with quays, and a small slip for building fishing craft. This is entered by a channel between two jetties, 65 yds. wide at the entrance, narrowing

France—St. Valery-en-Caux (continued).

to 40 yds. There is 20 ft. in the channel and in the centre of the basin at high water springs, and 13 ft. at neaps. The wet dock is a part of the flushing reservoir; it is entered by a lock 138 ft. long, 32 ft. wide, and has a depth over the sill at high water springs of 18 ft., and 11 to 12 ft. at neaps. Spring tides rise 27 ft.; neaps, 21 ft.; neaps range 15 ft. The Dock (Bassin de la Retenue) is 755 ft. long, 262 ft. wide, with a depth of 24 ft. at the entrance at high water, ordinary springs, dry at low water.

Pilotage.—Steamers, 30 c. per reg. ton; sailing vessels, 60 c. per reg. ton.

Port Charges.—**Health Dues:**—10 c. per reg. ton. **Quay Dues:**—50 c. per reg. ton. **Local Dues:**—40 c. per reg. ton. **Brokerage:**—On cargo, 50 c. per ton. **Ballast:**—8d. per ton. Charges on a vessel of 67 reg. tons, drawing 9½ ft., £2, exclusive of brokerage.

ST. VALERY-SUR-SOMME.

St. Valery-sur-Somme, in lat. 50°11' N., long. 1°38' E., is situated on the left bank of the Somme.

Population.—3,700; Abbeville, 20,000.

Imports.—Wood, coal, salt, pig-iron, wheat, cheese, flax, saltpetre, wool, and linseed.

Exports.—Chalk, potatoes, vegetables, flints, etc.

Accommodation.—St. Valery-sur-Somme is the outport to Abbeville, with which it communicates by means of a canal, 10 miles long, navigable for vessels of 11 ft. draught. Vessels drawing 12 ft. can ascend as far as St. Valery-sur-Somme at spring tides, and those of 9 ft. draught at neaps, but vessels drawing 11 ft. are sometimes detained outside for days during the winter season, with winds from the N. to N.N.W. The harbour is well sheltered. Vessels ground every tide on a bottom of mud and sand. The harbour has 1,395 ft. of quayage; the depth at high water spring tides is 16 ft., and at low water neaps 5 ft.

The canal to Abbeville has a mean width of 134 ft., and 3,780 ft. of quayage. The lock is 960 ft. long, and 28 ft. wide at the entrance. A steam-tug can be had. There is a gridiron 98½ ft. long, and 23 ft. wide.

Pro Forma Charges on a steamer of 92 reg. tons, carrying 360 tons of coal inwards, drawing 11 ft., and going out with a cargo of 360 tons of phosphates:—

Pilotage in, 30 c. per reg. ton	27	60
„ out, 20 c. „ „	18	40
Health dues	9	20
Passport	1	95
Local dues, 15 c. per reg. ton	13	80
Quay „ 50 c. „ „	46	00
Brokerage in and out, 75 c. per reg. ton	270	00

386 95 = £15 7s. 1d.

SANARY (formerly St. Nazaire).

Sanary, in lat. 43°8' N., long. 5°49' E., is a small port 6 miles W. of Toulon.

Accommodation.—It is only suitable for vessels drawing 10 to 13 ft. of water. The port is formed by a mole; the entrance is 27 yds. wide.

France.**TONNAY-CHARENTE.**

Tonnay-Charente, in lat. $45^{\circ}57'$ N., long. $0^{\circ}55'$ W., is 4 miles higher up than Rochefort.

Population.—4,700.

Imports.—Coal, wood, phosphates, pyrites, cereals, etc.

Exports.—Brandy, residue of pyrites, hay, superphosphates, etc.

Accommodation.—The depth is $20\frac{1}{2}$ ft. at spring tides, and $16\frac{1}{2}$ at neaps. Steamers from 300 to 1,000 tons burden are regularly employed in the brandy trade. The quays are 2,205 ft. in length, alongside which vessels, loading brandy, berth. Opposite the railway station there are two wharves for discharging coal and other bulky goods, belonging to the State Railway, each provided with three cranes. Numerous rails run from the wharves to the railway station. There is a gridiron 121 ft. long.

Pro Forma Charges on a steamer of 816 reg. tons, laden with 1,550 tons of coal, and ballast out to the United Kingdom, drawing 17 ft. inwards, and 13 ft. outward :—

	Fr.	c.
Pilotage from the sea to Tonnay-Charente	145	00
Reporting inwards	12	75
Harbour master's fees	12	25
Sanitary dues	81	60
Navigation dues	408	00
Town dues, 10 c. per reg. ton	81	60
Pilotage to sea	70	00
Brokerage, 15 c. per ton	232	50

1,043 70 = £41 8s. 4d.

TOULON.

Toulon is in lat. $43^{\circ}9'$ N., long. $5^{\circ}55'$ E.

Population.—103,549.

Imports.—Grain, wood, coal, hemp, wine, brandy, and salt provisions.

Exports.—Salt, oil, almonds, soap, etc.

Accommodation.—Toulon, the principal station of the French navy in the Mediterranean, is a large fortified town, irregularly built at the bottom of a hill, and possessing a fine harbour and a roadstead, one of the largest and safest in Europe. The harbour extends about 6 miles inland, and has good anchorage in every part of it, but the principal anchoring place is the Little Road, opposite the town, where ships ride in 6 or 7 fathoms of water on mud, and are sheltered from all winds. No fire is allowed on board ships in the harbour.

The Mercantile Port.—(These particulars relate to the part which is reserved for commercial purposes.) The Vieille Darse is 1,148 ft. long, 328 ft. wide, $8\frac{1}{2}$ acres in extent, 164 ft. wide at the entrance, 26 ft. deep at the entrance, 18 ft. deep in the basin, $9\frac{1}{2}$ ft. deep at the quayside, and has 1,653 ft. of quayage. There are no cranes. The work to obtain a depth of 22 ft. $11\frac{1}{2}$ in. is nearly complete.

Port de la Rode is 581 ft. long (mean length), 574 ft. wide (mean width), 8 acres in extent, 118 ft. wide at the entrance, 18 ft. deep at the entrance, 16 ft. deep in the basin, $9\frac{1}{2}$ ft. deep at the quayside, and has 2,418 ft. of quayage. There are no cranes.

France—Toulon (continued).

Bassin Missiessy is reserved for Government ships. There is a crane on the E. side of this basin to lift 150 tons.

The Government have 9 dry docks here, and merchant vessels can be authorized to use them in cases of emergency.

Arsenal Principal	No. 1	is 247 ft. long,	59 $\frac{1}{2}$ ft. wide at the entrance,	21 $\frac{1}{2}$ ft. on the sill.
" "	2	245 " "	59 $\frac{1}{2}$ " "	22 $\frac{1}{2}$ " "
" "	3	292 $\frac{1}{2}$ " "	71 " "	25 $\frac{1}{2}$ " "
Arsenal de Castigneau	1	325 " "	71 $\frac{1}{2}$ " "	25 $\frac{1}{2}$ " "
" "	2	385 $\frac{1}{2}$ " "	72 $\frac{1}{2}$ " "	27 $\frac{1}{2}$ " "
" "	3	535 " "	77 " "	30 $\frac{1}{2}$ " "
Arsenal Missiessy	1	427 " "	91 $\frac{1}{2}$ " "	32 $\frac{1}{2}$ " "
" "	2	427 " "	91 $\frac{1}{2}$ " "	32 $\frac{1}{2}$ " "
" "	3	585 " "	93 " "	34 " "

Time Signals.—Chronometers can be checked. A black ball is hoisted on the signal staff at the Naval Observatory ten minutes before the signal. The ball is dropped at 10 h. 0 m. 0 s. a.m. Paris mean time, equal to 21 h. 50 m. 39 s. Greenwich mean time, and 22 h. 14 m. 20.8 s. local mean time. The signal is repeated two minutes later.

Pilotage.—There are no regular pilots; fishermen can be procured at the entrance of the gulf.

Port Charges.—**Tonnage Dues** :—1 fr. per reg. ton on vessels from the high seas; 50 c. per reg. ton on coasting vessels. **Weighing Charge** :—1 fr. per ton (half paid by the consignee and half by the vessel). **Bal-
last** :—2 fr. per ton. **Sanitary Dues** :—Vessels from any port in Europe, 10 c. per ton; out of Europe, 15 c. per ton. **Discharging** :—coal, 1 fr. 20 c. per ton; wheat, 90 c. per ton; wine, 1 fr. per ton; wood in logs, 1 fr. to 1 fr. 50 c. per cubic metre. **Brokerage** :—30 c. per ton for sailing ships; 40 c. per ton for steamers.

Pro Forma Charges on a steamer of 1,000 tons measurement, entering loaded :—

	Fr.	c.
Quay dues, 50 c. per ton	500	00
Passport	2	00
Sanitary dues	100	00
Consular dues, according to nationality, 20 fr. to	50	00
Pilotage (optional) inwards	50	00
" " outwards	50	00
Custom House dues	30	00
Brokerage	400	00

1,182 00 = £46 18s. 0d.

TRÉGUIER.

Tréguier is in lat. 48°47' N., long. 3°16' W.

Population.—3,500.

Imports.—Coal, timber, salt, guano, phosphates, bricks, etc.

Exports.—New potatoes, corn, etc.

Accommodation.—There is 12 ft. of water alongside the quay at high water, neap tides, and 20 ft. at high water, spring tides. Vessels can remain afloat at all times, at 190 metres (622 $\frac{1}{2}$ ft.) from the quay. There is a good bottom of slime and gravel. The quays are 1,263 ft. long, but 738 ft. are under repair, and only 525 ft. are available. Rails have been laid on all the quays. Loading and discharging has to be done by a vessel's own appliances. The river of Tréguier is very easy of access, and is well supplied with buoys.

France—Tréguier (*continued*).

Pilotage.—Steamers, 15 c. per reg. ton in, and the same out; sailing vessels, 30 c. per reg. ton in, and the same out.

Port Charges.—Entrance Fees:—6*d.* per reg. ton. **Labour:**—About 3 fr. per day. **Brokerage:**—4*l.* per reg. ton.

TREPORT AND EU.

Treport, in lat. 50°3' N., long. 1°22' E., is situated at the mouth of the river Brest. It is the nearest port to Paris.

Population.—About 5,000.

Imports.—Coal, jute, wrought iron, tin plates, machinery and metal work, pottery and glassware, old paper, etc.

Exports.—Sugar, hay and clover, flints, champagne, glassware, phosphates, mineral waters, barley, etc.

Accommodation.—There is good anchorage in the roads or sand, but exposed to all winds from S.W. to N.E. There is a bar at the entrance with 20½ ft. of water on it at ordinary spring tides and 14 ft. at ordinary neaps. The entrance is easy, being between two stone piers. The outer harbour has a water area of 14 acres, and is 183 ft. wide at the entrance. The depth of the entrance is 22 ft. at high water, ordinary springs, and at the quayside, 22 ft. There is 618 ft. of quayside. The inner harbour has an entrance 53 ft. wide. Between the inner harbour and the canal there is the new dock with a water area of 7 acres. The mean width of the dock is 310 ft. The width of the lock from the inner harbour is 45 ft., and from the canal, 30 ft. The available depth of water for vessels proceeding to the dock at high water, ordinary springs, is 24 ft. The length of quayside is 850 ft. with 24 ft. alongside. There are 3 ballast cranes, capable of discharging 1 to 5 tons per hour, and several small hand cranes. There is a floating dock. Regular steamship communication with London, Swansea, Bristol, Manchester, Leith, Dundee, and Southampton. There is a canal from Treport to Eu about 3 miles along, with a depth of water of 12 ft.

The wharfing of the western side of the floating dock in order to meet the steadily increasing requirements of shipping has been decided upon, but the work has not yet been commenced.

Pro Forma Charges on a steamer of 488 net reg. tons, with 1,000 tons coal from Newcastle:—

	Fr.	c.
Harbour dues, at 55 c. per ton	268	90
Pilotage in, including boat	69	50
Pilot moving the ship through the dock gates and back	8	00
Bridge men	5	00
Tonnage duty, passport	246	55
Pilotage out, including boat	40	75
Bill of health, 10 per cent. on reg. tonnage	48	80
Fire watchman	5	00
Brokerage, at 20 c. per 1,000 kilos.	200	00

892 50 = £35 8s. 5*d.*

TROUVILLE.

Trouville, in lat. 49°22' N., long. 0°6' E., and Deauville are two towns separated by the river Touques, having the same port and dock, about 7½ miles from Honfleur.

Population.—Trouville, 6,500; Deauville, 2,800.

France—Trouville (*continued*).

Imports.—Coal, cement, timber, and ice.

Exports.—Corn, barley, wheat, oats, and seeds.

Accommodation.—It is a perfectly safe harbour, and can be entered by vessels of 14 ft. draught, at ordinary neap tides, and 17 ft. draught, at spring tides.

The bottom of the tidal harbour consists of mud mixed with sand, and vessels may be stranded without suffering any damage. The channel at the entrance has a maximum depth of 18 ft. at springs. Tidal signals are made from a flag-staff placed at the entrance of the E. pier, showing every 10 in. of depth of water, commencing from 8 ft. 3 in., that there is over the stone-works situated on the eastern side of the outer channel. (To obtain the depths of water in the channel it is necessary to add about 2 ft. to the depths shown at the signal mast.) There are two wet docks, viz. :—

Dock de Mornay.—Length, 983 ft. ; width, 263 ft. ; length of quayage, 2,325 ft. ; number of jetties, 2 ; length of jetties, 718 and 1,870 ft. ; width of entrance, 177 ft. ; depth of water at the entrance at high water, ordinary springs, 18 ft., neaps 14 ft.

Half Tide Dock.—Length, 330 ft. ; width, 250 ft. ; length of quayage, 750 ft. There are 8 wharves connected with railway lines.

There is a fishing quay 2,132 ft. long with 14 $\frac{1}{4}$ ft. alongside at high water, ordinary springs.

There are 5 steam cranes on the E. quay of de Mornay Dock, which facilitate the discharging of cargoes. The use of the cranes is compulsory, and the usual charge is 50 fr. Railway lines, in direct communication with the station, run along the quays. There is a gridiron, but there are no facilities for repairs to the hull and very few for machinery.

Pilotage.—Compulsory for sailing vessels of 40 reg. tons and over, and for steamers of 80 reg. tons and over. There are 4 pilots, manning four cutters bearing the letters TR. and their number in the mainsail and on their bows. Pilotage dues: Sailing vessels, 25 c. per reg. ton inwards, and 12 $\frac{1}{2}$ c. outwards; steamers, half pilotage inwards, and two-thirds outwards of sailing vessels' tariff. When a pilot boards a vessel and is refused by the master, the full pilotage is due to him. When a captain orders a pilot to take the ship out, or hoists the pilot flag for the same purpose, he has to pay 3 fr. if the ship does not sail, provided a pilot calls on board.

Port Charges.—Quay Dues:—50 c. per reg. ton. **Boat Assistance:**—In the harbour, 7 fr. 50 c. ; out of the harbour, 10 fr.

Shipbrokerage:—Sailing vessels entering in ballast, 12 $\frac{1}{2}$ c. per reg. ton; clearing in ballast, *nil*; entering with full or part cargo, 50 c. per ton of cargo; clearing with full or part cargo, 25 c. per ton of cargo. Steam vessels entering in ballast, with or without passengers, 12 $\frac{1}{2}$ c. per reg. ton; clearing in ballast, without passengers, *nil*; clearing in ballast with passengers, 12 $\frac{1}{2}$ c. per reg. ton; entering with full or part cargo of coal or ore, 25 c. per ton of cargo; of other merchandise, 50 c. per ton of cargo; clearing with full or part cargo, half of the rates charged for steamers entering with cargo. **Ballast:**—Good sand ballast can be obtained at moderate prices. **Water:**—Fresh water can be obtained from pipes along the quays of the Dock de Mornay.

Pro Forma Charges on a steam collier of 300 reg. tons, with 500 tons of coal:—

France—Trouville (*continued*).

	Fr.	e.
Pilotage in, 12½ c. per reg. ton	37	50
Boat assistance in	7	50
Bridgemen	5	00
Quay dues, 50 c. per reg. ton	150	00
Tonnage duty (Chamber of Commerce)	150	00
Sanitary dues, 10 c. per reg. ton, and passport	31	95
Brokerage, 25 c. per ton d.w.	125	00
Pilotage out (two-thirds of pilotage in)	25	00
Boat assistance out	10	00
Hire of steam cranes	50	00
Lifeboat	2	00
Other expenses (about)	31	20
	625	15 = £24 16s. 1d.

VANNES.

Vannes, in lat. 47°40' N., long. 2°46' W., is situated at the N.E. extremity of the Gulf of Morbihan.

Population.—About 23,500.

Imports.—Wood, coal, and iron.

Accommodation.—Vessels of 150 tons can anchor alongside the quays, but larger ones have to anchor at Conlau, about 2 miles from Vannes. Ships of 800 tons can safely anchor here. The tidal port is accessible to vessels drawing 15 ft. at high water, spring tides, and 10½ ft. at high water, neaps. Shipbuilding is carried on.

Pilotage.—A pilot should always be employed, and one can be had in the neighbourhood of Belle Ile.

There are no dues here.

VIVIER.

Vivier, in lat. 48°36' N., long. 1°46' W., is situated on the Baie de Mont St. Michel, about 7 miles from Grouin Point.

Accommodation.—It is only suitable for small craft. Unless well acquainted with the harbour, shipmasters must have a local pilot on board. Vessels lie safely aground, on a mud bottom, alongside a quay. Rise of highest tide about 15 ft., lowest 6 ft.

The charges on a vessel of 64 reg. tons, ballast in and cargo out, drawing 8 ft. loaded, amounted to 35 fr.

CORSICA.

Corsica, the smallest of the three large islands of the Mediterranean, lies between lat. 41° and 43° N., and long. 8°45' and 9°60' E. It ranks as a department of the French Republic, and has an area of 3,367 miles and a population of 291,160. It is distant from the nearest point on the coast of Italy (Bastia to Piombino) 55 miles; from France (Calvi to Antibes), 112 miles; from Spain (Ajaccio to Barcelona), 372 miles; from Sardinia (Bonifacio to Longo Sardo), 12 miles; and from the coast of Africa (Bonifacio to Bona), 285 miles.

The following is a list of the telegraphic signal stations (semaphore):—

France.

Semaphores.	Situation.
1. Cape Sagro	On Cape Corse, 22 miles N. of Bastia.
2. Cape Corse	N. point of Corsica.
3. Mortella Point	In Gulf of St. Florent.
4. Bocca Fogata	Between Ile Rousse and Algajola.
5. Cape Cavallo	5½ miles to S. of Calvi.
6. Sanguinaire Island	Entrance to Gulf of Ajaccio.
7. Cape Pertusato	S. point of Corsica.
8. Chiappa Point	Entrance to Porto Vecchio Gulf.
9. Alistro	E. coast.

The currency and weights and measures are the same as in use in France. Branches of the Bank of France are established at Bastia and Ajaccio, in addition to which there are a number of private banking institutions. The Customs stations open to commercial operations are the ports of Bastia, Ajaccio, Bonifacio, Ile Rousse, Calvi, Centuri, Canari, St. Florent, Macinaggio, Porto Vecchio, Propriano, Sagone, and Cervione.

AJACCIO.

Ajaccio is in lat. $41^{\circ}56'$ N., long. $8^{\circ}43'$ E.

Population.—About 17,000.

Imports.—Foodstuffs, etc.

Exports.—Citrons, timber, black antimony, olive oil, wine, chestnuts, flour, fish, and fruit.

Accommodation.—Ajaccio Bay is the finest in the island. There is a depth of 30 ft. of water in the middle of the harbour, which is open to winds from the W.

The Citadelle Harbour.—The depth available for vessels entering the port is 35 ft. The length of quayage is 2,000 ft. with a depth of 22 ft. alongside 250 ft., and 9 ft. alongside the remainder. Vessels load and discharge alongside the quay or by lighters. Lighters are scarce, and there are no cranes.

Pilotage.—Compulsory. Sailing ships, 10 c. per ton up to 300 tons, and 5 c. for every ton above 300, both on arrival and departure. Steamers pay half the above rates.

BASTIA.

Bastia, in lat. $42^{\circ}41'$ N., long. $9^{\circ}25'$ E., is on the E. coast of Corsica.

Population.—26,000.

Imports.—Coal, flour, etc.

Exports.—Oil, wine, goatskins, wood, citrons in brine, black antimony, chestnut and oak extracts for tannings.

Accommodation.—The old harbour is now closed to commerce, being reserved for torpedo boats. The new port, Port St. Nicholas, is accessible to vessels of all sizes, but the entrance is difficult in strong westerly winds, when safe and sheltered anchorage is off the Old Town, in 7 to 8 fathoms. Vessels can lie alongside the quays, which are 1,900 ft. long, in 25 ft. for 600 ft., and in 18 ft. for 1,300 ft. Vessels can discharge coal direct into the railway trucks on the quay; average about 300 tons per day.

Bunker coal, water, and provisions are obtainable.

Pilotage.—Compulsory. Sailing vessels pay, both on arrival and departure, 10 c. per reg. ton up to 500 reg. tons; from 501 to 600, 8 c.; from 601 to 700, 7 c.; from 701 to 800, 6 c.; from 801 to 900, 5 c.; from

France—Bastia (*continued*).

901 to 1,000, 4 c.; above 1,000, 3 c. Steamers pay one-half the above rates.

Port Charges.—All goods imported and exported pay a tax averaging about 30 c. per ton to the Chamber of Commerce for port works.

Loading and Discharging Cargo:—1 fr. 25 c. per ton.

Pro Forma Charges on a steamer of 990 reg. tons, coming from England with a cargo and bound for a foreign port in ballast:—

	Fr.	c.
Quay dues	495	00
Sanitary dues	98	90
Passport	2	00
Pilotage in and out	79	60
Mooring and unmooring	25	00
Postages and petties	10	00
Water	35	00
Use of hose	10	00
Boat hire	15	00
Use of fenders	5	00
Stamps on bill of lading	4	80
Clearance commission	125	00
Discharging 1,860 tons at 1 fr. 25 c.	2,325	00
	3,230	30 = £128 3s. 5d.

BONIFACIO.

Bonifacio is in lat. 41°23' N., long. 9°10' E.

Population.—About 4,000.

Accommodation.—This port is only accessible to vessels with a draught of less than 14 ft. Owing to the narrow entrance, about 90 yds. wide, this harbour can only be entered with a fair wind and good weather, but once inside, the harbour is good, and there is 25 to 30 ft. of water in the centre. Length of quayage, 1,200 ft., with a depth of 9 to 10 ft. alongside and 15 ft. almost close alongside.

CALVI.

Calvi is in lat. 42°33' N., long. 8°44' E.

Population.—About 2,000.

Accommodation.—The best anchorage here is near to the town, two cable-lengths from the shore, in 4 to 6 fathoms, with a cable fast to the rocks, and an anchor out.

ILE ROUSSE.

Ile Rousse, in lat. 42°39' N., long. 9°56' E., is situated on the N.W. side of the island.

Accommodation.—The harbour is equipped with 550 ft. of quayage with a depth of 18 ft. alongside half the length, and 6 ft. alongside the remainder.

MACINAGGIO.

Macinaggio is in lat. 42°57' N., long. 9°26' E. Vessels anchor off the port in 6 to 8 fathoms.

*France.***PORTO VECCHIO.**

Porto Vecchio is in lat. $41^{\circ}37'$ N., long. $9^{\circ}15'$ E.

Population.—About 3,300.

Exports.—Timber, cork, and salt.

Accommodation.—This port is well sheltered. There is good anchorage inside the bay. The town is unhealthy in the summer.

PROPRIANO.

Propriano is in lat. $41^{\circ}40'$ N., long. $8^{\circ}55'$ E. Anchorage off the town is in 15 to 18 fathoms.

SAGONE.

Sagone is in lat. $42^{\circ}7'$ N., long. $8^{\circ}42'$ E. The harbour is sheltered from all winds but W.S.W. Anchorage is in 4 to 6 fathoms.

ST. FLORENT.

St. Florent is in lat. $42^{\circ}39'$ N., long. $9^{\circ}18'$ E. Anchorage is in 8 to 9 fathoms, mooring on the shore.

GERMANY.

The German Empire is a confederation of twenty-five German states and the Reichsland under the presidency of the Emperor-King of Prussia. By the constitution of April 16, 1871, all the states of Germany form a union. The total area of Germany is 208,780 English square miles, the population being 63,641,280, according to the census of 1905.

Commerce.—The commerce of the Empire is under the administration or guidance of special laws and rules emanating from the Zollverein, or Customs League, which embraces practically the whole of the states of Germany, including Hamburg and Bremen (since 1888) and the Grand Duchy of Luxemburg. The German tariff is frankly protectionist, duties being heavier in proportion to the amount of labour represented by the articles. The total value of German imports in 1907, including bullion and coin, was £450,166,100 ; of exports, including bullion and coin, £355,029,150.

Mercantile Marine.—The Mercantile Marine of Germany consisted of 532,146 tons (sail), and 2,096,947 tons (steam), or a total of 2,629,093 net tons on June 30, 1907, these figures including only vessels of 17½ tons and upwards.

Internal Communications.—The railways of Germany, comprising 35,760 miles in 1906, are principally in the hands of the State. Special rates are granted on goods for export. Of canals and inland waterways Germany has 8,564 miles, the great rivers of the country enabling goods to be brought very cheaply from the interior to the ports. The ship canals are very important, no less than 1,281 miles being open in 1907. The Kaiser Wilhelm Canal connects the North Sea and the Baltic. It is 61 miles in length, 72 ft. in breadth at the bottom, and 213 ft. in breadth at the surface, with a depth of 29½ ft. The Königsberg–Pillau Canal is 20 miles in length. The German Government has commenced another stupendous undertaking, the Rhine–Herne Canal, to join the Rhine with the Dortmund–Ems Canal traversing the whole of the industrial portion of Westphalia, including the coalfields. The Rhine–Herne Canal is expected to be finished by 1915. The Government will build at first along the route three large harbours for public use, and fifteen of the principal collieries have agreed to construct private docks for their own accommodation. Our Consul states :—“ When this scheme is completed all the larger German rivers will be in communication with each other from E. to W. right across the Empire, thus cheapening the freights from the S.E. and E. enormously. Germany will then have increased facilities in competing in foreign markets and developing her export trade, as the S.E. and E. portions of her Empire will then be in direct communication by water with the North Sea.” The Government has other plans for adding to and improving the inland waterway communication of the country, so that eventually all the canals and rivers will form part of a co-ordinated system giving access from the seaboard to practically every quarter of the Empire.

Germany.

Currency, Weights and Measures.—The currency is based upon a gold standard, the unit of account is a mark, the tenth part of a gold coin, the 10-mark piece.

100 pfennigs = 1 mark.
20·43 marks = £1.

The metric system of weights and measures is in force ; 2·83 cubic metres = 1 register ton.

Free Ports.—In Germany there are certain ports, including the two most important of all, Hamburg and Bremen, which keep up large free harbours, and sea-going vessels visiting these free harbours are not subject to any Customs regulations. In some other smaller ports, i.e., Lubeck, Brake, and Weser, etc., there are no regular free harbours, but there are small free or bonded districts, where sea-going vessels can discharge and deposit their cargoes free from Customs duties. Subject to these exceptions, the Customs regulations may be summarized as follows :—

Customs Regulations.—A shipmaster on arrival in a port or roadstead must submit to the police regulations of such port, which are to be made known to him by the port officers. The master is then required to deliver a complete manifest of the cargo at the Custom House, declaring clearly if the whole cargo is to be entered at the port, and the part, if any, which is to be carried farther in the ship. The merchandise, as per bill of lading, is to be regularly entered.

The entries are to be drawn up specifying the description, weight, measure, or quantity, agreeable to the Zoll tariff for the payment of duties.

Luggage of passengers must be noted as such in the manifest, as well as the personal property of the master. Respecting ship's stores, a separate report, if they consist of articles which pay a consumption duty, is required in duplicate ; one is returned to the master after revision in order that he may take on board an equal quantity of similar provisions when he sails.

If a vessel remains in a roadstead and only discharges the cargo into lighters, the consumption of provisions in the roadstead is duty free. A form is presented to the captain to fill up as his report. It must be filled up exactly according to this form, and written clearly in the German language. The declaration is binding on the master, and each error discovered subjects him to a penalty. If the master has not a report with him, he may have one prepared in the port by the Custom House officer, in which case he delivers all his papers to the officer who stamps and numbers them, the last being marked as such. If the report has to be signed on shore, it must be delivered to the Customs officers within twenty-four hours after the arrival of the ship in the roads, and if not, possession of the ship will be taken at the master's expense.

If a master is bound for another destination, and only enters the harbour through distress, then a general inspection only is made, in order that no part of the cargo may be disposed of. A report, however, is made of the cargo. If a ship remains in the roads longer than twenty-four hours after a declaration is made without entering or proceeding to unload, unless prevented by stress of weather, then an officer repairs to the ship and examines the hold, locks the hatches, etc. To the officers on service aboard proper maintenance is allowed, the same as is afforded to travellers of the trading class.

Germany.

Vessels with cargo of coal, peat, bricks, stones, chalk, clay, lime, cement, granite, gypsum, slate, and salt, are treated as in ballast if they have no other cargo on board.

Colonial Possessions.—Germany's principal possessions abroad are : Kaiser Wilhelmsland in New Guinea ; the Bismarck Archipelago ; part of the Solomon Islands, and the Marshall Islands in the Western Pacific ; Kiau-chau in Asia ; and in Africa, German East Africa, German South-West Africa, the Kameruns, and Togoland.

Emigration Laws.—Before any vessel is allowed to convey emigrants from a German port it has first to be specially examined by the Emigration authorities, in order that the number of emigrants it is qualified to carry may be fixed in accordance with the accommodation available. This accommodation is clearly laid down in the Emigration Laws of the Empire as follows :—

Accommodation.—Every emigrant to be allowed a space of not less than 2.85 cubic metres, unhampered by luggage.

The deck used by the emigrants must be properly lighted. Open lights are prohibited, as are those of an explosive nature, such as petroleum, methylated spirits, acetylene, etc.

In cold weather the emigrants' rooms must be heated by means of approved harmless heating installations.

A sufficient number of sleeping berths must be provided with mattress, pillow, and rug for every emigrant, these berths and bedding to be thoroughly cleansed and disinfected after each voyage.

Two washhouses at least, one for males and one for females, must be provided for the exclusive use of the emigrants.

Not less than one w.c. must be provided for every fifty male and female emigrants respectively.

Every emigrant ship must be provided with at least two isolated sick rooms, one for male and one for female emigrants. These sick rooms, which must have an air space of 10 cubic metres per 100 emigrants, are to be placed in a favourable position with extra good accommodation so far as lighting, heating, and ventilation are concerned. They must be provided with doors which can be opened so as to admit of the carrying in or out of patients. Special bathing accommodation and two w.c.'s for the exclusive use of invalids to be provided in close proximity to the sick rooms. This hospital accommodation must be equipped with two sleeping berths at least, these to be provided with mattresses, pillows, rugs, and two sets of bed linen for every hundred emigrants which the ship is authorized to carry. Further, there must be provided the necessary wearing apparel for the use of the invalids, an operating table and washing accommodation for the medical man, and, lacking a bath-room close by, a hip-bath, together with a water-tank capable of holding a quantity of water sufficient for all purposes.

Food and Water.—Emigrants must not be allowed to provide their own food. They must be provided with not less than three meals daily. These must be properly prepared, with suitable changes, and served at regular intervals and in the quantities stated in the regulations. Drinking water to be provided in the quantities laid down by the regulations. Eating and drinking utensils to be supplied by the ship.

Germany.

Vessels authorized to carry any number up to 100 emigrants must carry one experienced cook to prepare the food for such emigrants. Should the number authorized exceed 100, an assistant cook must be engaged.

Suitable utensils for the preparation and serving of food must be provided, together with correct scales and weights. One pot to be exclusively used for boiling water, tea and coffee.

Every vessel to be properly found with water, provisions, fuel and light for the presumably longest duration of the voyage in the quantities mentioned in the following schedule. Each package containing provisions must be distinctly marked with the nature of the contents and the net weight or quantity of the same.

SCHEDULE.

For every ten days of the presumably longest duration of the voyage the following quantities of water, provisions, fuel, and light must be taken on board each authorized emigrant ship:—

For each emigrant—	60 litres.
Water	2,000 grammes.
Provisions—Beef	1,000 "
Pork or bacon	3 "
Herrings	3,600 grammes.
Bread (wheat or barley)	720 "
Flour (wheat or barley)	275 "
Peas	225 "
Beans	360 "
Rice	180 "
Pearl barley	50 "
Oats	100 "
Plums	50 "
Apple rings	400 "
Pickled cabbage	100 "
Vegetables, dried, pressed	3,000 "
Fresh potatoes	350 "
Butter	120 "
Salt	0.12 litre.
Vinegar	125 grammes.
Coffee, roasted; also in tablets	25 "
Chicory	20 "
Tea	150 "
Sugar	100 "
Syrup	120 "
Condensed milk	
Additional for invalids and children per 100 emigrants per 10 days—	5 litres.
Claret	2,000 grammes.
Sugar	1,000 "
Sago	2,000 "
Groats	1,500 "
Pearl barley	1,000 "
Condensed milk	
Additional for each child under one year per 10 days—	
Condensed milk or sterilized natural milk, the proportion of weight being one part of condensed milk to six parts of sterilized milk	500 "

The water taken on board must be in good condition.

One-fifth of the beef must be fresh or preserved, but preserved veal or mutton may be carried instead. From the beginning of the voyage a whole day ration of meat must be served twice a week so long as the stock lasts.

Pork or bacon may be substituted for part of the beef in the following proportion:—375 grammes of pork or 250 grammes of bacon to be reckoned equal to 500 grammes of beef, but not more than one-half of the ordered quantity of beef may be replaced by pork.

Germany.

Fish may be substituted for part of the beef in the following proportion :— 375 grammes of fish to be reckoned equal to 500 grammes of beef, but fish may only be served twice a week.

Pork may be substituted by the same quantity of mutton or fish containing fat, i.e., salmon, eel, herring, etc., but under any circumstances fish must not be served more often than twice a week.

Vessels equipped with a bakery may in place of bread take flour in the proportion of 80 grammes flour to every 100 grammes of bread ordered to be carried; provided that at least half of the bread must be made of wheat and half the flour must be wheaten flour.

Two kinds of vegetables at least must be carried.

ALTONA.

Altona is in lat. $53^{\circ}32'$ N., long. $9^{\circ}56'$ E.

Population.—168,320.

Imports.—Coal, grain, fish, timber, stone, and hides.

Export.—Grain.

Accommodation.—There are three harbours, viz., the West-Hafen, the Ost-Hafen, and the Fischerei-Hafen. The West-Hafen is 1,100 ft. long, and 160 ft. wide, and at ordinary spring tides it is 26 ft. deep at high water, and $19\frac{1}{2}$ ft. deep at low water. The Ost-Hafen is 1,870 ft. long and 300 ft. wide, with the same depth as the West-Hafen. The Fischerei-Hafen is for trawlers and smacks only; it has a quay 210 ft. long, and a depth of 11 ft. at low water. The West-Quay is 1,100 ft. long, and has two sheds. There is a fixed steam crane to lift 15 tons, and 8 movable steam cranes to lift 15 tons, and 8 movable steam cranes to lift $1\frac{1}{2}$ tons each. The Ost-Quay, which is lighted by electricity, is 1,870 ft. long, and has three sheds. There are 15 movable steam cranes to lift $2\frac{1}{2}$ tons each. Sea-going vessels can exchange cargo with the river boats or barges direct if they lie near the strong dolphins which separate the port works from the river. The tidal harbours are all under the control of the Government of Altona, but the management is entrusted to the Altonaer Quai and Lagerhaus Gesellschaft. There is one wooden floating dry dock capable of lifting vessels of 520 reg. tons, for repairing purposes. Altona has direct railway communication with every important place in the Empire.

Pilotage.—Compulsory. Rates are the same as at Hamburg.

Port Charges.—**Mooring:**—Per reg. ton, 10s. to 20s. **Clearance Fees:**—£5 5s. for a steamer of about 2,000 tons d.w. **Towage:**—£2 per shift. **Boat Hire:**—10s. per shift. **Ballast:**—1s. to 1s. 6d. per ton. **Labour:**—5s. per day. **Harbour Dues:**—1. Entering from places on the Elbe or its tributaries: (a) if they do not put to sea again, 2 pf. per cubic metre; (b) if they put to sea again soon, 3 pf. per cubic metre. 2. Entering from the sea: (a) for a net measurement of 120 cubic metres, 3 pf.; (b) for more than a net measurement of 120 cubic metres, 10 pf. Coal, coke, stone, etc., only pay half the duty.

Pro Forma Charges on a steamer of about 450 reg. tons, with a cargo of 1,000 tons of coal in, and ballast out, drawing 15 ft. loaded :—

Germany—Altona (*continued*).

	Mk.
Harbour dues at 5 pf. per cubic metre	55
Brokerage, £3 3s.	64
Pilotage, in and out, £12 5s. (sea and river)	250
Towage, in and out, £2 10s.	50
Boat hire, 10s.	10
Harbour master	15
Stevedore, £36 10s.	745
Petty expenses	6

1,195 = £58 11s. 7d.

ANCLAM.

Anclam is situated in lat. 53°50' N., long. 13°42' E., on the river Peene, about 7 miles from its mouth in the Kleine Haff.

Population.—15,625.

Accommodation.—The depth of water on Anclam bar is from 3½ to 10 ft.; from the bar to the town a little more; but the channel is narrow and tortuous. Vessels bound for Anclam proceed by way of Swinemünde, passing through the “Great Sea” and the “Little Sea.”

Port Charges.—The cost of towing a schooner of 100 tons d.w. from Stettin to Anclam is about 75 mk. Small sailing vessels generally go up to Anclam without the help of a tugboat. Vessels are towed through the railway bridge on the way to Anclam by Government steamer without payment.

Expenses of a vessel of 52 tons, about 10s.

APENRADE.

Apenrade, in lat. 55°3' N., long. 9°28' E., is situated at the head of the bay of the same name, opposite the island of Alsen.

Population.—7,023.

Imports.—Timber and coal.

Accommodation.—The entrance to the harbour, as well as the harbour itself, has been deepened to 17 ft., and vessels of 16 ft. draught may enter and lie afloat alongside well-built quays in perfect safety.

Pilotage.—Pilots are always obtainable at the following rates. For vessels from 150 to 500 cubic metres—inwards, 2½ pf. per cubic metre; outwards, 1½ pf. per cubic metre. Over 500 cubic metres, 1 pf. more per cubic metre inwards and outwards.

Port Charges.—Tonnage Dues:—Vessels above 85 cubic metres measurement (steam or sail), if loaded, pay inwards 10 pf. and outwards 10 pf. per cubic metre. In ballast, inwards or outwards, 5 pf. per cubic metre. Vessels loaded solely with salt, cement, or other common articles, pay at the rate of ships in ballast. **Quay Dues:**—For measurement, 6 pf. per cubic metre; weight, 10 pf. per ton; coal, salt, cement, etc., only pay 5 pf. per ton. These dues are customarily paid by the receivers of the goods. **Lights:**—In consequence of the easy access to the harbour, only a harbour light is burning from August 1 to April 30. No light dues are charged. **Ballast,** at 2 mk. 50 pf. per last of 2 tons, easily obtainable. **Water** is obtained alongside the quays from the town conduit at 1 mk. per ton. **Brokerage:**—Clearing charges, 15 pf. inwards and outwards per reg. ton. Commission on chartering, 3 per cent.

	Mk.	pf.
Pilotage, inwards and outwards . . . . .	. 21	32
Tonnage dues inwards, 566 cubic metres . . . . .	. 56	60
" " outwards, " " . . . . .	. 28	30
Clearing inwards and outwards " " . . . . .	. 30	00
Commission on chartering, 2,400 mk. at 3 per cent. . . . .	. 72	00
Ballast, 30 tons at 1 mk. 25 pf. per ton . . . . .	. 37	50
Towage outwards . . . . .	. 15	25

260 92 = £12 15s. 8d.

BRAKE.

Population.—5,171.

Exports.—Sugar, scrap-iron, bottles, pit-props, manure, salt, coke, Westphalian coal, etc.

Docks.—There is a wet dock which will take vessels of 19½ ft. at high water, ordinary springs ; there are also 2 dry docks, one with 7 ft. and the other with 13 ft. on the sill at high water. Light repairs to hull and machinery are executed in the dry dock, and vessels of 400 tons are built.

Pilotage.—The pilotage on the river is not compulsory. Tugboats can be had at moderate prices on arrival off Bremerhaven.

Pilot Dues :—River pilots board vessels at Bremerhaven for Brake and charge—from April 16 to September 15, 7 mk. 65 pf. for every metre a vessel draws ; from February 16 to April 15, and September 16 to November 15, 10 mk. 5 pf. per metre ; and from November 16 to February 15, 10 mk. 20 pf. per metre. For vessels piloted into dock a compulsory pilotage is charged :—

Up to 90 reg. tons	Mk.	pl.
" 120 "	4	00
" 150 "	5	00
" 180 "	6	00
Above 150 "	8	00

Pilotage out of dock :—

Up to 90 reg. tons	2	65
" 120 "	3	35
" 150 "	4	00
Above 150 "	5	35

Germany—Brake (continued).

Port Charges.—Brake is a free port. **Tonnage and Port Dues :—** Same as at Nordenham. Ballast, according to season, 1 mk. to 1 mk. 50 pf. per ton.

Pro Forma Charges on a steamer of 2,266 net reg. tons, with a cargo of grain from the Black Sea :—

	Mk.	pf.
Light dues at 14 pf. per cubic metre (the first 200 cubic metres are free of charge)	869	68
Dock dues at 4 pf. per cubic metre	278	52
Quay dues at 10 pf. per ton of cargo landed on the quay	357	70
Pilot, sea to Bremerhaven	184	95
„ Bremerhaven—Brake—Bremerhaven	146	79
„ Bremerhaven—sea	61	94
Consular fee	2	60
Advertisement	12	30
Protest extended	68	80
Survey on hatches and cargo	34	00
Tugboat at £6, at 20 mk. 40 pf.	122	40
Discharging at 5d. per ton	2,302	95
Checkway at 3 pf. per ton	172	70
Agency fee, £4 4s. at 20 mk. 40 pf.	85	70
Postages and petties	40	00
Telegrams and telephone	30	00

4,771 03 = £233 17s. 7d.

BREMEN.

Bremen, in lat. 53°5' N., long. 8°46' E., is situated on the Weser, about 50 miles from its mouth, and about 34 miles above Bremerhaven-Geestemünde.

Population.—214,861.

Imports.—Cotton, tobacco, rice, coffee, tea, hides, petroleum, coal, wine, timber, dye-woods, cedarwood, iron, grain, cotton-seed, flour, oils, wool, jute, fruits, linseed, etc.

Exports.—Woollen goods, linens, cigars, glassware, wool, toys, machinery, furniture, cleaned rice, ironware, steelware, beer, cement, sugar, ore, coke, kainite, etc.

Accommodation.—There are three large docks at Bremen City, on the right bank of the Weser, namely Hafen I., Hafen II., and Holzhafen; and two smaller docks on the left bank of the Weser, the Hohethorshafen and the Siczerhutshafen. The Hafen I. is more than two miles long, with 75 hydraulic cranes, one floating crane lifting 40 tons, sheds and storehouses, etc. The Hafen II. is 1,720 metres (5,590 ft.) long, 100 metres (325 ft.) broad, and at its mouth in the river the entrance of this dock is enlarged to an outer harbour of 350 metres (1,137½ ft.) in length, and 280 metres (910 ft.) in breadth; from thence, the entrance is to the new floating dock, with two sections, one 117 metres (380 ft.) long, 26 metres (84½ ft.) broad, with a capacity of 10,000 tons; the other 70 metres (227½ ft.) long, with 6,000 tons capacity, so that both sections together can take vessels of 16,000 tons. The Holzhafen is 1,500 metres (4,875 ft.) long, and principally destined for the wood trade. There are two dry docks for vessels up to 2,800 tons. The Bremen authorities have improved the river up to Bremen, so that vessels of 21 ft. English draught can come up to the town. The river up to Bremen is kept clear in winter by powerful ice-breakers. Vessels, if ordered to Bremen, and of a draught preventing them from coming up to the town, are discharged at the lower ports. Consignees are at liberty to determine the place of discharge. Only such

Germany—Bremen (*continued*).

a place can be chosen as can be reached by the vessel with safety and without being obliged to lighten. Torpedo boats and vessels for the Imperial Navy are built here up to 5,600 tons. Repairs can be executed.

Time Signals.—Chronometers can be checked here. A black ball, 5 ft. in diameter, is raised half-way 10 minutes before the signal, and closed up 3 minutes before, 174 ft. above high water on the tower of the Harbour Office at the S.E. end of Free Haven. The signal is given by the ball falling 5 ft. at noon and 1 p.m. Mid-European time, corresponding to 11 a.m. and noon Greenwich mean time.

Greenwich Mean Time.

23	00	00
24	00	00

Local Mean Time.

11	35	8.6
0	35	8.6

Pilotage.—Pilotage from the roads of Bremerhaven to the city of Bremen, and vice versa—17 mk. 50 pf. per 3 metres draught, and 13 mk. for each additional metre.

Port Charges.—Dock Dues:—Steamers 4 pf. and sailing vessels 3 pf. per cubic metre for fifteen days. **Beacon and Light Dues:**—10 pf. per cubic metre for sailing vessels, and 14 pf. for steamers, for each cubic metre exceeding 200 cubic metres. **Lighterage** is at the expense of the consignee. Ship provisions free of duty. Bunker coal, stone and sand ballast always to be had at moderate prices. Water for drinking purposes 25 pf. per cubic metre, f.o.b.

LAW CONCERNING DISCHARGING OF VESSELS.

These regulations are also applicable to all ports on the Weser lying below Bremen.

In the interest of the freight business, in consideration of those vessels whose cargo is consigned to the town of Bremen, but whose draught does not allow them to proceed up to Bremen, the following is ordered in conformity with constitutional determination :—

1. With regard to appointing the place for unloading on the river Weser below Bremen. Shipmasters must proceed to that place of discharge assigned to them by the consignees. In all cases consignees' orders are valid if given within the next twenty-four hours after the arrival of the vessel in the roads of Bremerhaven.

During the months of November, December, January, and February, and at any time when the Weser is not free from ice, neither a receiver of cargo is allowed to point out a place for discharging the cargo, nor a shipmaster to choose such port for want of assignment that is not united with the town of Bremen by the railroad.

2. The transport of the cargo from the port of discharge to Bremen takes place at the expense and risk of the receiver of the cargo, who therefore has to receive the cargo at such port of discharge. On account of refusal or retarded reception, the prescriptions of the Commercial Law (Art. 595 and ff.), concerning refusal or retarded reception, are to be adopted. The acceptance of the cargo is not considered finished till its arrival at Bremen.

If, however, goods are left at the port of discharge for the purpose of storage, or if they are not shipped to the place of destination, but to any other place, the acceptance is considered finished; however, in this case, too, the freight is to be paid in Bremen, as the agreed port of destination. The shipmaster is obliged to deliver the cargo at the port of discharge without any claims on previous payment of the freight, or the fulfilling of

Germany—Bremen (continued).

the other obligations of the receiver, or their guarantee, but without prejudice of his right to take judicial measures of safety in case of peculiar risk of his claims.

3. The shipmaster is obliged, on demand of one or several of the receivers of cargo, to make use of the competency given to him by Arts. 602 and 605 of the general German Commercial Law, to keep the several receivers of general cargo to prompt reception, and, in case of delay, to store the goods according to the fore-mentioned articles against every single receiver.

4. For vessels under charter, loaded with cargo, bound to one consignee, and provided no other stipulations have been agreed upon between the parties, the time for unloading is fixed upon as follows:—

SAILING VESSELS.

Up to 50 net reg. tons.	2 days.	Over 1,201 to 1,400 tons	17 days
Over 51 to 100	3	1,401 to 1,600	18
101 to 150	4	1,601 to 1,800	19
151 to 200	5	1,801 to 2,000	20
201 to 250	6	2,001 to 2,200	21
251 to 300	7	2,201 to 2,400	22
301 to 350	8	2,401 to 2,600	23
351 to 400	9	2,601 to 2,800	24
401 to 500	10	2,801 to 3,100	25
501 to 600	11	3,101 to 3,400	26
601 to 700	12	3,401 to 3,700	27
701 to 800	13	3,701 to 4,000	28
801 to 900	14	4,001 to 4,300	29
901 to 1,000	15	4,301 to 4,700	30
1,001 to 1,200	16	4,701 to 5,100	31

And one day more for each additional 400 tons.

STEAMERS.

Up to 200 net reg. tons.	2 days.	Over 1,600 to 1,900 tons	10 days.
Over 201 to 300	3	1,901 to 2,300	11
301 to 400	4	2,301 to 2,700	12
401 to 600	5	2,701 to 3,100	13
601 to 800	6	3,101 to 3,500	14
801 to 1,000	7	3,501 to 4,000	15
1,001 to 1,300	8	4,001 to 4,500	16
1,301 to 1,600	9	4,501 to 5,000	17

And one day more for each additional 500 tons.

1. For Sailing Vessels loaded with wood—

		If commencing in the period—	
		From March 1 till October 31.	From Nov. 1 till end of Feb.
For vessels up to 100 tons reg. net measurement		6 days.	6 days.
From 101 to 200 reg. tons (inclus.).		7	7
201 to 300		8	8
301 to 400		10	10
401 to 500		12	12
501 to 600		13	14
601 to 700		14	15
701 to 800		15	16
801 to 900		16	17
901 to 1,000		17	18
1,001 to 1,100		18	19
1,101 to 1,200		19	20
1,201 to 1,300		20	21
1,301 to 1,400		21	22
1,401 to 1,500		22	23

And for every further 100 tons—1 day additional.

2. For Steamers loaded with wood—

		If commencing in the period—	
		From March 1 till October 31.	From Nov. 1 till end of Feb.
Up to 200 tons reg. net measurement		3 days	4 days
From 201 to 300 reg. tons (inclus.).		4	5
301 to 400		5	6
401 to 600		6	7
601 to 800		7	8
801 to 1,000		8	9
1,001 to 1,200		9	10
1,201 to 1,400		10	11
1,401 to 1,600		11	12
1,601 to 1,800		12	13
1,801 to 2,000		13	14

And for every further 200 tons—1 day additional.

Germany—Bremen (*continued*).

If vessels are only partly loaded, the time for discharging is counted proportionately shorter. Sundays and holidays are not taken into account in the settlement of these terms.

5. While accepting the cargo, the receiver is allowed to weigh and measure on board of the vessel during the time of discharging.

6. Claims for loss of or damage to goods that were visible according to outside appearance during the delivery out of the vessel, can only be considered if the shipmaster or his substitute shall have been informed of it by writing or in any other sufficient manner, during the reception, or within forty-eight hours after delivery.

7. The freight, and what else is due to the shipmaster or the owner according to the bargain or the bill of lading, is to be paid in Bremen the second working day after the arrival of the cargo there, and in the case mentioned in paragraph 2, after the storing or re-shipping has taken place; but, at all events, whether such arrival, storing, or re-shipping may be made or not, at latest the tenth day after the reception out of the vessel.

The account of time is settled for each bill of lading separately, and begins for the payment of freight for each bill of lading with the day following the delivery of the last lot of goods consigned in the bill of lading from on board the vessel.

Cotton steamers are discharged very quickly; a steamer with 15,000 bales was discharged in fifty-nine working hours.

Pro Forma Charges on a steamer of 2,465 net reg. tons, with a cargo of 10,700 bales cotton, and 1,500 tons phosphate, from Savannah discharging at Bremen:—

	Mk.	pf.
Inward pilotage—sea to Bremerhaven, 190 mk. 96 pf.; Bremerhaven to Bremen, 61 mk. 10 pf.	252	06
Advertising order-parcels of cargo	18	30
Notary, drawing up power of attorney to collect freight	19	00
Official survey on cargo and hatches with certificate	39	00
Dock dues, including extra charges for running lines, dock pilotage, etc.	291	04
Light and beacon dues	948	64
Official quay duties	578	10
Consul fees	5	10
Outward pilotage—Bremen to Bremerhaven, 27 mk. 30 pf.; Bremerhaven to sea, 85 mk. 76 pf.	113	06
Tug-assistance in—Bremerhaven to Bremen, 163 mk. 20 pf.; docking Bremen, 61 mk. 20 pf.	224	40
Tug-assistance out—undocking Bremen, 61 mk. 20 pf.; Bremen to Vegesack, 102 mk.	163	20
Stevedore's bill for discharging cargo, etc., 10s. per 100 square, 7s. per 100 round bales; 8d. per 1,000 kilos. phosphate and various extra labour	2,424	10
Tally clerks for checking delivery of cargo, 5s. per 100 square, 4s. per 100 round bales; 1d. per 1,000 kilos. phosphate	668	75
Mending cargo of cotton, done by consignees	164	38
Telegrams, postage, petties	65	46
Agency fee, including clearance at Custom House and collection of freight, as per charter party, £17 8s. 1d. at 20 mk. 52½ pf.	357	20
	6,331	73 = £310 7s. 7d.

Germany.

BREMERHAVEN.

Bremerhaven, in lat. 53°33' N., long. 8°36' E., is situated on the right bank of the mouth of the river Weser, and is always free from ice.

Population.—23,991.

Imports and Exports.—Same as Bremen.

Accommodation.—There are 4 wet docks, as under :—

Name.	Water Area.	Length.	Width.	Width of Entrance.	Ordinary Springs High Water.		Length of Quayage.
					Depth on Sill.	Depth of Dock.	
	Acres.	Feet.	Feet.	Feet.	Feet.	Feet.	Miles. Yds.
Kaiser Hafen	47	4,758	375-969	56-91 $\frac{1}{2}$	26-34	31-36	1 1,008
Trockendockanlage	10 $\frac{3}{4}$	1,470	189-495	91 $\frac{3}{4}$	—	31-35	0 1,093
Neuer Hafen	20 $\frac{1}{4}$	2,782	374	68	24 $\frac{3}{4}$	28	1 121
Alter Hafen	18	2,394	375	36	19	23	0 1,596

Kaiser Hafen has 4 cranes from 2 to 150 tons.

Trockendockanlage „ 4 cranes.

Neuer Hafen „ 6 „ „ 11 $\frac{1}{2}$ „ 75 „

Alter Hafen „ 3 „ „ 2 „ 71 $\frac{1}{2}$ „

There are 6 graving docks, as under :—

Name.	Available Docking Length.	Width at Entrance.	Depth at High Water, Ordinary Springs on Sill.	Remarks.
Kaiser	Feet. 741 $\frac{1}{2}$	Feet. 98 $\frac{1}{2}$	Feet. 35 $\frac{1}{2}$	Situated in the New Kaiser Hafen
Norddeutscher-Lloyds	{ 453 } 373	56 $\frac{1}{2}$	21	Can take two vessels.
Seebecks	{ 268 $\frac{1}{2}$ } 190	51	17	„ „ „ „
„ No. 2	360	57	18	„ „ „ „
„ No. 3	{ 210 } 175	45	17	„ „ „ „
„ No. 4	{ 365 } 240	58	20	„ „ „ „

There is an iron shipbuilding yard, so that all repairs may be executed and vessels of any size constructed. Alongside of these docks there are sixteen large stone and iron-built sheds, into which the goods, if to be sent by railroad, are taken directly out of the ships' holds. There are also five sheds in course of construction in the new Kaiser Hafen II. and III.; these are destined for cotton. Railway lines run along one side of these warehouses, and furnish the means for conveying the goods direct from the warehouse to the several destinations. Adjoining the Kaiser Hafen III. there will be a connecting harbour with a large dry dock capable of accommodating the largest vessels, with a dock gate and entrance from the Weser. The average depth of the Weser at low-water mark at Bremerhaven is 24 ft., but there is generally sufficient water for vessels drawing up to 28 ft. There is 30 ft. at high water neap, and 40 ft. at spring tides.

Germany—Bremerhaven (*continued*).**KAISER DRY DOCK.**

Gross reg. ton.		1st day.		Each succeeding day.	
		mk. = £75		500 mk. = £25	
For ships up to 5,000		1,500	100	600	30
For ships of 5,001	6,000	2,000	125	675	33 15s.
"	6,001	2,500	150	750	37 10s.
"	7,001	3,000	150	1,000	50
"	8,001	3,000	150	1,200	60
"	over 11,000	3,000	150		

Sundays and holidays, extra charges.

Extracts from the harbour regulations, a copy of which is handed to each shipmaster on arrival in port:—

No sea-going vessel of 170 cubic metres burden or more is allowed to enter one of the harbours or one of the entrance basins without making use of a harbour pilot and the assistance of a boat. The harbour master is authorized to release steamships and lighters from this obligation, and, under particular circumstances, to impose it on ships under 170 cubic metres.

Ships having explosive or easily inflammable articles on board are not allowed to enter, nor are such articles permitted to be shipped within the harbour.

To this description of articles belong in particular:—

- Blasting oil, dynamite, and quantities above 50 grammes of other explosive stuffs.
- More than 10 kilogrammes of gun-powder or gun-cotton.
- Materials and productions liable to spontaneous ignition. Amongst these are chemicals, and packed up fibres or clouts impregnated with oil or grease.
- Petroleum (crude oil) or naphtha, or other oils or gas-fluids, evolving inflammable vapours at a temperature lower than 30° Réaumur.

Ships loaded with petroleum (refined) or other oils, or gas-fluids, evolving inflammable vapours only at a temperature of 30° Réaumur, or more, may come into the harbour after having obtained permission, but solely to the place appointed by the harbour master, and after all fire on board has been extinguished.

A watch, to be appointed by the harbour board, must be taken on board at the expense of the ship, at the rate of 7 mk. for each 24 tons. Vessels loaded with cotton pay 1 pf. per bale. Under certain circumstances the harbour board is entitled, in order to avert the danger of fire during night time, to prohibit the remaining on board of the crew in a vessel thus loaded.

Time Signals.—Chronometers can be checked here. 150 yds. S.W. of the lighthouse, 128 ft. above high water, a black ball, 5 ft. in diameter, is hoisted halfway up 10 minutes before the signal is given and close up 3 minutes before. The signal is given at noon and 1 p.m. Mid-European time by the ball falling 5 ft.

Greenwich Mean Time.		Local Mean Time.	
23	00 00	11	34 16.9
24	00 00	0	34 16.9

Pilotage.—There are always three pilot cutters cruising between Borkum and the Weser; powerful tow-boats are always ready for service, and, by a signal to the lighthouse, may be ordered down the river for assistance.

1. Sea Pilotage:—(a) For ships inwards from sea, per metre:—

Germany—Bremerhaven (continued).

	Mk.	pf.
From February 16 to April 15	25	40
„ April 16 to September 15.	23	50
„ September 16 to November 15	25	40
„ November 16 to February 15	31	20

(b) For ships outwards to sea, per metre :—

	Mk.	pf.
From March 1 to April 15.	20	10
„ April 16 to September 15.	16	70
„ September 16 to October 31	20	10
„ November 1 to end of February	26	80

2. Harbour Pilotage :—

	Boat Assistance.	
	Mk.	pf.
For ships up to 500 cubic metres	6	00
„ over 500 and up to 1,000 cubic metres	8	00
„ „ 1,000 „ 2,000 „	12	00
„ „ 2,000 „ 3,000 „	18	00
„ „ 3,000 „ 5,000 „	25	00
And 5 mk. more for each additional 2,000 cubic metres.		

Boat assistance to ocean steamers, 10 mk. 50 pf. Pilot for moving ship in harbour, 2 to 12 mk.

Towage.—According to agreement. Powerful tugboats can always be obtained at the mouth of the river. The signal for a tugboat is a flag half-mast high.

Port Charges.—1. **Careening Charges** :—Shipmasters who make use of any one of the careening places for the examination or repairing of their ships have to pay 5 pf. per cubic metre ; with a minimum charge of 10 mks. **Town and Lighthouse Dues** :—10 pf. for sailing vessels, and 14 pf. for steamers per cubic metre. **Harbour Dues** :—6 pf. per cubic metre per month, for the first and second month ; for every additional month, 1 pf. ; for steamers above 6,800 cubic metres, 30 pf. per cubic metre for the first month, 7 pf. for the second, and 2 pf. for following months. **Water** :—2s. per 210 gallons for drinking purposes, and 1s. per 210 gallons for boilers.

Pro Forma Charges on a steamer of 2,349 net reg. tons, with a cargo of 7,670 bales of cotton, about 3,300 tons phosphate, and 51 tons lumber and ochre, from Savannah, discharging at Bremerhaven :—

	Mk.	pf.
Inward pilotage 6-6 m. at 31 mk. 20 pf.	205	92
Extending sea-protest with translation of log-book	63	50
Advertising order-parcels of cargo	17	70
Notary, drawing up power of attorney to collect freight	18	60
Dock dues, including extra charges for running lines, dock pilotage, etc.	636	44
Official certificate of stowage	1	30
Light and beacon dues	902	86
Official dock-watch for cotton on the quay	76	70
Outward pilotage, 4-3 m. at 26 mk. 80 pf.	115	24
Tug assistance in } two tugs	285	60
„ „ out }		
Stevedore's bill for discharging cargo, etc., 10s. per 100 square bales ; 8d. per 1,000 kilos. phosphate, lumber, etc. ; and various extra labour	3,387	90
Tally-clerks for checking delivery of cargo, 5s. per 100 square bales ; 1d. per 1,000 kilos. phosphate, etc., and overtime	706	45
Mending cargo of cotton done by consignees, 1 mk. 30 pf. per 100 bales	99	73
Telegrams, postage, and petties	35	05
Agency fee, including clearance at Custom House and collection of freight, £17 12s. 4d., at 20 mk. 50 pf. (as per charter party)	361	15

6,914 14=£338 18s. 9d.

Germany.**BRUNSBÜTTEL.**

Brunsbüttel is situated in lat. 53°52' N., long. 9°7' E.

Population.—4,404.

Imports.—Coal and timber.

Export.—Bricks.

Accommodation.—Depth at high water, 32½ ft. ; depth at low water, 24½ ft. There are three piers (about 130 ft. long) for discharging cargo.

Pilotage.—Compulsory, but included in harbour dues.

Port Charges.—**Harbour Dues:**—39·62 pf. per reg. ton. **Clearance Fees:**—1d. per ton cargo.

Pro Forma Charges on a steamer of 700 reg. tons, cargo of 1,400 tons of coal in, and ballast out :—

	Mk.	pt.
Harbour dues at 39·62 pf. per reg. ton	277	34
Brokerage	120	00
Boat hire	10	00
Discharging 1,400 tons at 80 pf.	1,120	00
Harbour master's fee	7	00
	<hr/>	<hr/>
	1,534	34 = £75 4s. 3d.

BURGSTAAKEN.

Burgstaaken is in lat. 54°24' N., long. 11°13' E.

Population.—3,000.

Imports.—Coal, lumber, planks, and merchandise.

Exports.—Grain of all kinds, animals, seaweed, and straw.

Accommodation.—There is an average depth of 12 ft. of water in the harbour. There is a common slipway for vessels up to 200 tons.

Pilotage.—Not compulsory. **Towage:**—1½d. per reg. ton.

Port Charges.—**Boat Hire:**—5s. **Labour:**—3s. 9d. per day
Brokerage:—About 3s. 4d. per reg. ton. **Harbour Dues:**—For vessels in ballast, under 60 reg. tons, 1½d. per reg. ton ; over 60 reg. tons, 2d. per reg. ton. If loaded, double. No dues on vessels coaling.

COLBERG.

Colberg is in lat. 54°13' N., long. 15°37' E.

Population.—22,856.

Imports.—Coal, manure, herrings, paving-stones, maize, oil-cake, and petroleum.

Exports.—Grain, potatoes, wood, and pit-props.

Accommodation.—Vessels will find good anchorage in the roadstead in 6½ to 7 fathoms of water. The entrance has an average depth of 15 ft. The inner harbour, Colbergermünde, has 16 ft. of water. The town of Colberg lies about a mile inland, but as the water is shallow vessel load and discharge at places a short distance within the entrance of the harbour, alongside quays connected with the railway. There is a slip here for small vessels. During strong gales from W. to E.N.E. vessel

Germany—Colberg (*continued*).

should not attempt to enter, but keep to sea. The harbour is always free from ice, even when the bay is frozen over. Divers are always to be had.

Pilotage.—Pilots are always on the look-out in the daytime. **Towage** is seldom obtainable, and regular tow-boats are only at the port in summer.

Port Charges.—Vessels of 200 cubic metres (70 reg. tons) and over, pay 12 pf. per cubic metre with cargo, and with ballast 6 pf. in or out. Under 200 cubic metres, with cargo, 5 pf., and in ballast 2 pf. Vessels taking in or unloading ballast only pay for the labour, for which arrangements must be made. **Ballast** delivered free by the Harbour Board.

No **Light or Pilotage Dues.** **Brokerage:**— $2\frac{1}{2}$ per cent. **Clearing Charges:**—Including interpreting, 10 pf. per cubic metre. **Collecting Freight:**—1 per cent. **Manifest:**—5 to 10 mk. **Stevedore:**—10*d.* per ton of coals.

Pro Forma Charges on a Scotch schooner of 278 cubic metres, or 98 reg. tons, coming in with coal and leaving with pit-props for the Firth of Forth; and a steamer of 1,175 cubic metres, or 415 reg. tons, with rails from Rotterdam in, grain to London out:—

	Schooner. 98 reg. tons.		Steamer. 415 reg. tons.	
	Mk.	pf.	Mk.	pf.
Harbour dues in	16	68	141	00
" " out	33	36	141	00
Custom House declaration, manifest, etc.	5	00	15	00
Custom House officer's overtime	—	—	20	00
Shifting, pilot's ropes, fees, etc.	6	00	10	00
Hauling in	1	80	—	—
" " out	1	80	—	—
Brokerage, $2\frac{1}{2}$ per cent.	18	00	170	00
Address commission, 2 per cent.	14	00	—	—
Collecting freight, 1 per cent.	9	50	40	00
Clearance, 10 pf. per cubic metre	27	80	117	50
	133	94	654	50
	=£6 11 <i>s.</i> 3 <i>d.</i>		=£32 1 <i>s.</i> 8 <i>d.</i>	

CUXHAVEN.

Cuxhaven, in lat. $53^{\circ}52'$ N. long. $8^{\circ}42'$ E. stands on the S. point of the entrance to the Elbe, about 59 miles distant from Hamburg. Sailing vessels wait at the anchorage abreast the town for favourable winds. The Hamburg-American liners land and embark their passengers at Cuxhaven.

Population.—11,145.

Accommodation.—Cuxhaven is a port of call and coaling station, and there are good facilities for supplying steamers with bunker coal. Best Westphalian and North-Country steam coal are always kept in lighters and supplied as required. Signal for bunker coal, letter "V" International Code. A new railroad connects Cuxhaven with Bremerhaven (Geestemünde) and the interior of Germany. Besides this there is also a direct line of rails to Hamburg. There is a fog-signal station on the pier-head (Alte Liebe), a large gong being rung continually for half a minute at intervals of two minutes, as soon as fog-signals from approaching or passing vessels are heard.

Harbours.—The Neuer Hafen is partly leased by the Hamburg-American line and has an area of 22-24 acres. The length is 1,968 ft., and the extreme width, 820 ft. The entrance is 328 ft. wide and 32 ft. deep at high water,

Germany—Cuxhaven (continued).

ordinary springs, 25 ft. at low water. The quay is 4,045 ft. with a depth of 28 ft. and 21 ft. respectively at high and low water, ordinary springs. There are 6 electric cranes to lift 3 tons each. There are two piers, each 395 ft. long, which can be reached by vessels at any state of the tide. The tidal docks are all under the control of the Government of Hamburg. The Fischerhafen has an area of 9 acres, a length of 1,180 ft., and an extreme width of 525 ft. The entrance is 164 ft. wide, and the depth at ordinary springs is 19 ft. and 9 ft. respectively, according to the tide. Fifteen large steam trawlers have commenced to run to this port and the facilities for discharging and forwarding the fish have improved. There are two slipways of a very old pattern for lifting vessels up to 350 tons. Only small repairs can be carried out to the hull and machinery.

Time Signals.—Chronometers can be checked here. The signal is given 90 yards E. of the lighthouse, 78 ft. above high water, by means of a black ball, 5 ft. in diameter, which drops 10 ft. The ball is hoisted half-way up 10 minutes before, and close up 3 minutes before the signal is given.

Greenwich Mean Time.			Local Mean Time.			Mid-European Time.		
23	00	00	11	34	49.8	12	00	00
24	00	00	0	34	49.8	1	00	00

Pilotage.—Pilotage is compulsory for vessels over 135 reg. tons. Pilots can be obtained from white-painted schooners cruising between Borkum and Heligoland, with the word "Elbe" painted in black on their schooner sails, and with a Hamburg flag and red van flying from the top of the mainmast; or from white-painted, two-mast pilot steamers (black funnel), with the word "Elbe" painted in large black capital letters on both sides; or from a pilot galiot lying at anchor a quarter of a mile outside the second Elbe light-vessel, and in rough weather a quarter of a mile inside the same. Regular traders call at Cuxhaven for their Hamburg pilots. The **Pilotage Dues** are as follows, and include Beacon and Light Dues. It is the same whether a vessel takes a pilot off Borkum or at the galiot station in the Elbe:—

SEA PILOTAGE INWARDS.

				Summer.	Winter.
Sea to Hamburg, vessels drawing 10 ft.				45 mk.	65 mk.
" " " " 15 "				95 "	131 "
" " " " 20 "				187 "	250 "
" " " " 25 "				274 "	370 "
" " " " 29 "				314 "	431 "
Up to Cuxhaven 25 per cent. less.				Minimum charge 25 mk.	

Port Charges.—Towage:—Powerful tugboats always to be had between Borkum and Heligoland, and at Cuxhaven. Large tugboats, fitted with salvage gear and pumps, kept in readiness; divers always obtainable. **Harbour-master Dues:**—Sea-going vessels of over 150 cubic metres pay up to a depth of 2 metres, 5 mk., and for each further metre 5 mk. more, viz., a ship drawing between 2 and 3 metres paying 10 mk., a ship drawing between 3 and 4 metres paying 15 mk. **Tonnage Dues:**—Sea-going vessels discharging or loading here pay 6 pf. per cubic metre if laden with bulk articles—for instance, coal, wood, bricks; 12 pf. per cubic metre if laden with general cargo.

Ships putting in here under average are free from both harbour-master and tonnage dues. Steamers calling for bunkers pay only harbour-master dues according to draught.

Germany.

DANZIG.

Danzig is situated in lat. $54^{\circ}20' N.$, long. $18^{\circ}40' E.$, on the banks of the Mottlau, an affluent of the Vistula, which it joins about four miles from the sea.

Population.—159,648.

Imports.—Rice, coffee, wine, salt, petroleum, raw iron, cement, stone, chemicals, coal, coke, etc.

Exports.—Grain, seeds, bran, timber, oak wood, oak staves, sugar, molasses, black beer, spirits, flour, oil-cake, rape seed oil, empty barrels, etc.

Accommodation.—The port of Neufahrwasser, at the mouth of the river, can be entered at all times of the year by vessels drawing up to 23 ft. of water, and they can load and discharge there. During the time of severe frost, the navigation of the Vistula is kept open up to the town by the ice breaker and tugs of the Weichsel Company, in accordance with a contract made between this company and the Chamber of Commerce at Danzig. At such time towage is compulsory, and a small tax is levied both on the vessels using the channel cut through the ice and their cargoes. In summer, nearly all steamers loading grain take part of their cargo at the warehouses in the town and finish at the Holm, a loading-place on the way between Danzig and Neufahrwasser. Sailing vessels and steamers loading timber usually receive their cargoes at the Holm, Legan (a place further down the Vistula), or at Neufahrwasser. Most ships bringing coal are discharged at one of the above three places, if not chartered to Danzig town. Sugar is generally shipped from the warehouses in the open basin at Neufahrwasser, and from the river railway pier in the Vistula below Legan.

On approaching the coast, care should be taken not to mistake the church steeples of Danzig, E. of Neufahrwasser, for the towers at Neufahrwasser.

The best anchorage in the roads for the night, or during S. and W. winds, is in 6 to 7 fathoms of water; harbour lights, S. by E., about 2 to 3 miles off.

The bay of Danzig (Neufahrwasser) and the fairway into the outer ports are buoyed according to the system adopted by the German Empire; the outer buoy (a beacon buoy, black and red) is situated about 1,200 metres (about 1,380 yds.) from the small red port light on the E. pier head.

Vessels generally heave to near the outer buoy, marking the narrow fairway for large vessels into port (S.S.E. direction), and take a pilot, or, whenever the boarding of the vessel by pilots should prove dangerous on account of a high sea, follow the pilot steamer exhibiting a red flag at the masthead in place of the usual flag used by German pilot vessels.

Although the entrance is generally easy of access, and sufficiently free of swell, large vessels drawing up to 23 ft. English should enter the port with all precaution; anchors, hawsers, and chains ready for use, as advised by the pilot. Such deeply-laden vessels discharge their cargo on the E. pier, inside the port; vessels drawing 18 to 20 ft. can load and discharge at the quays of the new basin, near the entrance, and at the berths of the channel-like port of Neufahrwasser, or in the river, where a railway pier is opened for vessels of 21 ft. draught. In the middle of the channel of Neufahrwasser and the river, a deep fairway is kept for vessels of 20 to 21 ft. draught (mid-water)

Germany—Danzig (*continued*).

up to the berths of the Holm. Whenever the water is high, vessels drawing $13\frac{1}{2}$ ft. can proceed to the Mottlau, and discharge and load at the berths of the town of Danzig. A new straight channel has been cut from the upper end of Neufahrwasser to the Holm, 23 ft. deep and 2 miles long. The embankment has been fitted with quays and warehouses, and the upper end is now used for loading timber and discharging coal. Ships can discharge and load alongside commodious railway piers by the assistance of cranes lifting up to 25 tons. Compasses of iron ships are corrected in a reliable manner. An extract of the harbour regulations, translated into English, containing also general instructions, may be obtained at the pilot's office. Pilots also act as maritime police officers for the harbour.

There is a shipbuilding yard with a pontoon dock capable of lifting vessels 300 ft. long and 2,600 tons in weight. There are also two patent slips 200 ft. in length, one capable of lifting vessels of 1,000, the other of 500 tons d.w. capacity. There is a third slip capable of lifting vessels of 1,300 tons d.w. capacity; and with a length of bed 220 ft. The Imperial Navy has a floating dock for vessels up to 8,000 tons d.w., but it is only open to merchant vessels when unoccupied by men of war.

Pilotage is compulsory, and the pilotage charges from and to the sea are included in the harbour dues. Steam-tugs are mostly used by sailing vessels and large steamers coming from the road into the harbour and up the river, and vice versa. River pilotage, from or to Neufahrwasser, from Holm or Danzig, according to size of vessel—200 cubic metres, 4 mk., and 4,600 cubic metres, 51 mk. Pilot for mooring ship, 2 to 3 mk. each time.

Port Charges.—Harbour Dues:—Incoming or outgoing vessels pay per cubic metre as follows: (a) 1. Steamers with cargo, in or out, 12 pf. 2. Steamers in ballast 6 pf. (b) 1. Sailing vessels with cargo, in or out, 10 pf. 2. Sailing vessels, in ballast, 5 pf. Steamers measuring 200 cubic metres (7,063 cubic ft.), or less, pay 6 pf. and 3 pf. respectively. Sailing vessels of less than 200 cubic metres measure ment pay 5 pf. and 2 pf. Vessels with less than one-fourth of a cargo, or vessels with whole cargoes of either stone, slate, chalk, coal, coke, turf, salt, iron ore, lime, etc., or vessels used for pleasure, whether in or out, pay as if in ballast. Custom House official, if vessel discharging in the river, about 60 to 80 mk. **Clearance:**—Inwards and outwards at the Custom House by the broker, 10 pf. per cubic metre. **Discharging:**—Inwards, cargo of coal or iron, 35 to 50 pf. per ton. **Loading:**—Outwards, cargo of grain, about 15 pf. per ton weight; sugar, 30 to 35 pf. Wooden goods, about 60 to 100 pf. per load.

Since 1885 *rates of freight* for grain are calculated on the base of 500 English pounds of wheat, for shipment to the United Kingdom, or 1,000 kilos. to France, Belgium, and Holland. Peas, beans, and tares pay the same freight as wheat; for other kinds of grain an additional percentage is taken, according to the following scale:—For rye, 2 per cent. : for barley, linseed and rape seed, 5 per cent; for buckwheat, 10 per cent.; for poppy and grit, 15 per cent.; for hemp seed, $17\frac{1}{2}$ per cent.; for oats, $22\frac{1}{2}$ per cent. above the rate for wheat.

One last of coal is equal to 3,000 German kilos.

Germany—Danzig (continued).

APPROXIMATE ESTIMATE OF VARIOUS CHARGES ON A SHIP ENTERING AND CLEARING AT THE PORT OF DANZIG.

I.—A Steamer of 2,840 Cubic Metres, or 1,000 Tons Register.

	Harbour Dues.		River Pilotage.		Church Money and Lifeboat not compulsory.	Broker's Commission.	Total.
	Inwards.	Outwards.	Up.	Down.			
	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.
Inwards ballast, salt, or coal; outwards cargo.	170-40	340-80	34	34	28-40	284	891-60
Inwards cargo or iron; outwards cargo.	340-80	340-80	34	34	28-40	355	1,133
Inwards cargo or iron; outwards ballast.	340-80	170-40	34	34	28-40	284	891-60
Inwards coastwise from a Prussian Baltic port; outwards cargo.	—	340-80	34	34	28-40	284	721-20

II.—A Sailing Vessel of 568 Cubic Metres, or 200 Tons Register.

	Harbour Dues.		River Pilotage.		Ballast Money	Trackage.	Tow Steamer.		Church Money and Lifeboat Voluntary.	Broker's Commission.	Total.
	Inwards.	Outwards.	Up.	Down.			Up.	Down.			
	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.	Marks.
1. Inwards ballast, coal, salt, or stones; outwards cargo.	28-40	56-80	10	10	56-80	9	15	15	2-85	56-80	260-65
2. Inwards cargo; outwards cargo.	56-80	56-80	10	10	—	9	15	15	2-85	71-00	246-45
3. Inwards cargo; outwards ballast.	56-80	28-40	10	10	56-80	9	15	15	2-85	56-80	260-65

CUSTOM HOUSE REGULATIONS.

The shipmaster must, within twenty-four hours after arrival in port, make a declaration of the cargo on board, and of the ship's provisions, and he incurs a severe penalty if the declaration does not prove correct. The ship's hatches (if goods are on board) are sealed on arrival, and an additional declaration is accepted before they are unsealed; but no *later* declaration supplementary or explanatory of the first, and no submitting the goods to investigation by the officers, is received or allowed. If the shipmaster be unable to make a complete declaration on arrival, a Custom House officer is put on board, who remains until the ship is unloaded, at an expense to her of about 6s. per day and night. The cargo can only be discharged in the presence of a Customs officer.

The shipmaster, and not the receiver of the goods, is made responsible if the *contents* of the packages do not correspond with his declaration; and he is only exonerated from this by solemnly averring, on making the declaration, that the contents are unknown to him. An evident mistake or oversight is treated as rigorously as an intentional fraud.

Ballast can be discharged only at stated public places, on pain of a shipmaster being fined, or at private yards.

It is to be observed that a ship having on board a cargo, being less than one-fourth of her carrying capacity, is treated like a ship entering in ballast, as regards port charges.

No port charges to be paid by a ship taking Neufahrwasser as a port of refuge, or port of call, if the cargo on board is not moved.

It is material, however, to observe that the whole Custom House business of the shipmaster is conducted by Custom House brokers, so that he is never at a loss, being informed by the one he selects what he has to do. Alterations are frequently made in the Custom House regulations.

The shipmaster receives, on arrival, from the pilot commodore a copy of the harbour regulations, in his own language, with instructions how to act as to ballast.

Germany.

DUISBURG AND RUHRORT.

Duisburg is in lat. $51^{\circ}25'$ N., long. $6^{\circ}46'$ E., and Ruhrort in lat. $51^{\circ}28'$ N., long. $6^{\circ}45'$ E.

Population.—Duisburg, Ruhrort, and Meiderich, 206,853.

Imports.—Timber, ore, iron, grain, etc.

Exports.—Worked iron, steel, machinery, coal, patent fuel, etc.

Accommodation.—Ruhrort is one of the most important river ports in Europe, and sea steamers and sailing vessels plying to different ports regularly enter it. The depth of water varies according to the state of the river. Duisburg docks have $9\frac{1}{2}$ miles of quayage. There are 53 cranes to lift 1 to 45 tons each, 10 staithes to ship 100 to 120 tons per hour each, and 17 grain elevators belonging to private firms. Ruhrort docks have 8 miles of quayage. There are 36 cranes to lift 2 to 4 tons each, one floating crane to lift 40 tons, 11 staithes to ship 100 to 200 tons per hour each, and 4 grain elevators belonging to private firms. The port can be reached via Amsterdam and Rotterdam by vessels drawing 12 ft. at average water, or 8 ft. at low water, in the river. All the quays are connected with the railway.

Pilotage.—Not compulsory.

Port Charges.—**Harbour Dues** :—2 pf. per ton d.w. **Wharfage** :—According to cargo, 2 or 4 pf. per 1,000 kilos. **Towage** :—According to agreement. **Brokerage** :—5 per cent. on the freight.

Pro Forma Charges on a vessel arriving in Ruhrort with a cargo of 2,500 tons of iron ore :—

	Mk.	pf.
Harbour dues at 2 pf. per 1,000 kilos.	50	00
Towage in harbour	25	00
Wharf dues at 2 pf. per 1,000 kilos.	50	00
Towage out of harbour	25	00
Telegrams, postages, etc.	5	00

155 00 = £7 12s. 0d.

EMDEN.

Emden, in lat. $53^{\circ}22'$ N., long. $7^{\circ}13'$ E., is a Prussian State Harbour, situated on the right bank of the river Ems.

Population.—20,754.

Imports.—Timber, iron, iron ore, granite stones, nitrate, grain, etc.

Exports.—Grain, coal, coke, pasteboards, iron manufactures, etc.

Accommodation.—The river Ems, which is navigable from the sea to Papenburg (64 miles), has three entrances to the Wester-Ems, and one to the Easter-Ems. The deepest one is the Hubert Gat, close to Rottum Island. The Hubert Gat and the Wester-Ems are furnished with leading lights, on the Otters system, up to Emden harbour. Present depth of water up to Emden harbour is $32\frac{1}{2}$ ft. at ordinary tide.

The Outer Port has an area of 44 acres, with a depth of 37 ft. 9 in. at ordinary springs high water, and 26 ft. 3 in. at low water. On the W. side there is 2,922 ft. of quayage, with a crane to lift 40 tons, 13 electric cranes, a coal tip, and a set of loading bridges to facilitate the loading and discharging of large vessels and steamers. For the use of these and other facilities a

Germany—Emden (continued).

moderate tax is fixed by the State authorities. There are also two jetties for bulk cargoes.

The Inner Port has 2,220 ft. of quayage (with $1\frac{1}{2}$ to 25 ton cranes), one-third of it to take vessels drawing 21 ft., one-third vessels drawing 19 ft., and one-third for vessels drawing 17 ft. Nesserland sluice forms the entrance from the outer open harbour to the inner port. The sluice is 49 ft. wide, with a depth of 21 ft. 4 in. on the sill at ordinary tide; length of sluice chamber, 396 ft. This port is in direct connection with the canal from Emden to Dortmund: cargoes can be transhipped from the sea-going vessels directly into the canal craft. At the mouth of this canal in the port there is a public warehouse for goods, and sufficient electric cranes for loading and discharging vessels alongside the quay; also railway accommodation and electric light. There are also 5 floating cranes in the port. There are several shipbuilding yards, and a floating dock capable of raising boats 390 ft. long, and $58\frac{1}{2}$ ft. wide, with a tonnage of 3,500 tons, in forty minutes. There are 6 slipways with cradles from 80 to 150 ft. long. The greatest draught over the cradle blocks is 15 ft.

WET DOCKS.

	Length.	Width.	Depth.	Depth on sill at ordinary High Water Springs
Inner harbour . . .	7,800 ft. . .	300-500 ft. . .	18-25 ft. . .	$21\frac{1}{2}$ ft.
Eisenbahn dock . . .	1,400 „ . .	300 „ . .	17 „ . .	14 „
Three basins, each . .	900 „ . .	200 „ . .	20 „ . .	—

The inner harbour has an entrance 49 ft. wide with 3,100 ft. of quayage. Eisenbahn Dock has an entrance $36\frac{1}{2}$ ft. wide, with 1,312 ft. of quayage. This dock is chiefly used for laying up small vessels. The three basins are branches of the inner harbour.

There are several shipbuilding yards at Emden, and a floating dry dock in the inner harbour admitting vessels of 120 metres in length and 18 metres in breadth.

Pilotage.—Four pilot schooners and two pilot steamers, carrying a blue flag with a white “E,” with the German flag above it at the main-top, and the name “Ems” on their mainsail, are at disposal, and two of the schooners (and one of the steamers at intervals) are always cruising outside the entrances of the river Ems. There are also Dutch pilot cutters for Delfzyl, but vessels destined for a German port are obliged to take a German pilot if they require one. Pilotage is not compulsory.

PILOTAGE (VOLUNTARY).

Vessels drawing in Decimetres.	From Sea to Emden Water Sluice.	From Emden Water Sluice to Leerort, or Leer and back. From Leer to Papenburg and back. Pilotage one way half the following charge.	
		From Emden to Ditzum-Oldersum. From Ditzum-Oldersum to Leer. From Leer to Weener. From Weener to Papenburg and back.	
	Mk. pf.		Mk. pf.
17 and under	17 00		8 50
17 to 18 inclusive.	18 00		9 00
18 „ 19 „	19 00		9 50
19 „ 20 „	20 00		10 00
20 „ 21 „	21 00		10 50
21 „ 22 „	22 00		11 00
22 „ 23 „	23 00		11 50

Germany—Emden (*continued*).**PILOTAGE (VOLUNTARY)—*continued*.**

Vessels drawing in Decimetres.	From Sea to Emden Water Sluice.	From Emden Water Sluice to Leerort, or Leer and back. From Leer to Papenburg and back. Pilotage one way half the following charge. From Emden to Ditzum-Oldersum. From Ditzum-Oldersum to Leer. From Leer to Weener. From Weener to Papenburg and back.
	Mk. pf.	Mk. pf.
23 to 24 inclusive	24 00	12 00
24 " 25 "	26 00	12 50
25 " 26 "	28 00	13 00
26 " 27 "	30 00	13 50
27 " 28 "	33 00	14 00
28 " 29 "	36 00	14 50
29 " 30 "	39 00	15 00
30 " 31 "	42 00	16 00
31 " 32 "	45 00	17 00
32 " 33 "	48 00	18 00
33 " 34 "	51 00	19 00
34 " 35 "	54 00	20 00
35 " 36 "	60 00	21 00
36 " 37 "	66 00	22 00
37 " 38 "	72 00	23 50
38 " 39 "	78 00	25 00
39 " 40 "	84 00	26 50
40 " 41 "	90 00	28 00
41 " 42 "	96 00	30 00
42 " 43 "	102 00	32 00
43 " 44 "	108 00	34 00
44 " 45 "	114 00	36 00
45 " 46 "	120 00	39 00
46 " 47 "	126 00	42 00
47 " 48 "	132 00	45 00
48 " 49 "	138 00	48 00
49 " 50 "	144 00	51 00
50 " 51 "	150 00	54 00
51 " 52 "	156 00	57 00

The foregoing charges are from April 1 to September 30. From October to March the charge is one-half extra.

From sluice or river to Emden and back, from 3 to 9 mk. Boat hire with four men, 12 mk.

Port Charges.—(a) Per cubic metre measurement and for 30 days : Vessels under 200 cubic metres, 1 pf. ; vessels above 200 cubic metres, 2 pf. (b) Per ton, goods discharged or loaded : Class I, goods, 6 pf. ; Class II, goods, 5 pf. ; Class III, goods, 4 pf. ; Class IV, goods, 3 pf.

Exceptions to (a).—(1) If one and the same owner has to pay in one year for more than 50,000 cubic metres, the exceeding metres pay only $\frac{1}{2}$ pf. per cubic metre. With regard to vessels to and from European ports direct, including the Azov, the Black Sea, and the Mediterranean, this alleviation begins at 20,000 cubic metres. (2) Regular lines, or vessels frequenting the port regularly, can make arrangements for the paying of a lump sum in full instead of the above dues. (3) Bunker coal is free from port charges. (4) Tug-boats are free from port charges. (5) Vessels coming in on account of damage, or for shelter, are free from port charges provided they leave with the cargo which they had on board when entering.

Pro Forma Charges on a steamship arriving with 4,000 tons of grain from the Black Sea, and leaving with 4,000 tons of coal for Mediterranean :—

Germany—Emden (continued).

To pilotage in, 21 pf., 240 mk. Foy, 5 mk.	Mk.	pf.
„ out, 130 mk. „ 5 mk.	245	00
Harbour dues as inwards, plus 3 pf. per ton coal	135	00
Tug-boat hire	(about) 510	00
Custom House charges	300	00
Declaration, 20 mk., 10 mk.	50	00
Discharging expenses	30	00
Loading expenses, 4d. per ton coal	2,200	00
Boat assistance in mooring, 12 mk., 18 mk., 12 mk.	1,350	00
Swinging steamer	42	00
Survey on hatches	10	00
Clearing, in and out, £5 5s. ; £3 3s.	20	00
Advertisements	170	00
Superintending and checkweighing, $\frac{1}{2}$ d. per unit	7	50
Bank commission and bill brokerage 1 per cent.	170	00
Boat hire (during discharging only)	(about) 30	00
Consul's fees	45	00
Telegrams, messengers, postage, etc.	2	60
	35	00

5,352 10 = £262 7s. 2d.

FEDDERWARDER SIEL.

Fedderwarder Siel, in lat. 53°36' N., long. 8°20' E., is a small port on the left bank of the river Weser, near the entrance, and about 8 miles below Bremerhaven.

Pro Forma Charges on a vessel of 100 tons register, drawing 11 ft. water, cargo in and ballast out :—

Pilot, in and out	£	s.	d.
Harbour dues	4	0	0
Ballast, 40 tons	0	7	0
	3	7	0
	£7	14	0

FLENSBURG.

Flensburg, in lat. 54°46' N., long. 9°26' E., the capital and largest city of Schleswig, is situated at the head of Flensburg Fjord.

Population.—53,771.

Imports.—Coal, iron, timber, grain, salt, rice, palm kernels, petroleum, copper, slate, sleepers, bran, and wood-pulp.

Exports.—Bricks, draining tiles, oil, oil-cake, rice, yeast, beer, etc.

Accommodation.—The harbour has a water area of 90 acres ; extreme width, 1,000 ft. ; quayage, 3,000 ft. ; depth at quayside, 14 ft. There are two sheers to lift from 35 to 100 tons. The navigation is sometimes closed by ice in January or February. In the interior parts of the harbour there are transporting buoys and mooring piles, and along its western side there are quays, a careening place for large ships, a masting crane, and a slip. Vessels drawing 22 to 24 ft. lie alongside the quays. There is a floating dock that lifts vessels of 2,600 net reg. tons. There is communication by railway with Hamburg, Eckernforde, Kiel and Denmark, and by regular steamer between Denmark, Stettin, Kiel, Lübeck and several other ports of the Baltic.

All vessels coming from foreign countries have to stop at Holnis for inspection by Custom House officers. Holnis has post and telegraph stations. Tug boats can be had, price according to agreement. A diver and assistance steamers can also be obtained. Flensburg has a large iron shipbuilding yard,

Germany—Flensburg (*continued*).

employing about 3,000 men in the construction of steamers and sailing vessels, and repairs can be done at moderate cost.

Pilotage.—Vessels are not compelled to take pilots, but it is better for large ones to do so at the pilot stations of Birk, or at the lightship Kalkgrund. Sea pilotage, from Birk or the lightship, to or from the entrance of the Flensburg harbour : For vessels up to 400 cubic metres, 16 mk. For vessels from 400 to 1,600 cubic metres, 4 pf. per cubic metre. For every 100 cubic metres over 1,600 cubic metres, 1 mk. more. Harbour pilotage from the entrance of the harbour to the quay, or vice versa : For vessels up to 400 cubic metres, 4 mk. For vessels from 400 to 1,600 cubic metres, 1 pf. per cubic metre. For every 100 cubic metres over 1,600 cubic metres, 25 pf. more.

Port Charges.—**Harbour Dues**, for vessels up to 140 cubic metres loaded inwards, 5 pf. per cubic metre ; ballasted inwards, 2 pf. per cubic metre. For vessels over 140 cubic metres—loaded inwards, 12 pf. per cubic metre ; ballasted inwards, 6 pf. per cubic metre. The same charges are again made outwards.

Pro Forma Charges on a steamer of 2,418 tons reg. (6,800 cubic metres), cargo of rice in, and ballast out :—

	Mk.	pf.
Harbour dues at 18 pf. per net cubic metre	1,231	74
Clearance, 20 pf. per net reg. ton	483	60
Pilotage, 132 mk. in, 98 mk. out ; harbour pilot, 31 mk. 50 pf.	261	50
Boat hire, in and out	20	00
Discharging 2,020 tons of rice at 60 pf.	1,212	00

3,208 84 = £157 6s. 0d.

FREIBURG.

Freiburg, in lat. 53°58' N., long 9°17' E., is a small place, about 5 miles N.W. of Gluckstadt, but on the S. side of the river.

Population.—2,250.

Accommodation.—Vessels moor in the river Elbe, opposite the creek leading to Freiburg. To a stranger a pilot would be necessary.

Port Charges.—There are no port dues. Barges come down the river and take the cargo off free of charge, the vessel's crew discharging. **Labourer Charge:**—2s. 6d. per keel. **Ballast:**—1s. 6d. per ton. Shipmasters sometimes pay 10s. a day for dispatch.

FRIEDRICHSTADT.

Friedrichstadt is in lat. 54°21' N., long. 9°5' E., at the junction of the Eider with the Eider, 20 miles S.W. of Schleswig.

Population.—2,662.

Imports.—Coal, phosphates, wood, corn, and slack.

Exports.—Oats and sago.

Accommodation.—Vessels of 15 ft. can enter the harbour at high water, and lie afloat at the quays, but there is no water alongside at low tide.

Pilotage.—Compulsory to and from Tönning, and from Tönning to and from the sea. For steamers, 7½ pf. per cub. metre. No charge for sailing vessels.

Germany—Friedrichstadt (*continued*).

Port Charges.—Wharfage:—5 pf. per cubic metre for coal and
ek. Clearance Fees:—81 mk. 60 pf. for Friedrichstadt and Tönning
ether. Consular Fees:—15 mk. 30 pf. **Ballast:**—1 mk. 50 pf. per ton.
Charging:—64 pf. per ton.

Pro Forma Charges on a steamer of 500 tons net. reg., loaded
 and ballast out, drawing 16 ft. loaded :—

	Mk.	pf.
Harbour dues at 14 pf. per reg. ton	70	00
Brokerage (for here and Tönning)	81	60
Pilotage, in and out	172	89
Boat hire	15	00
Other charges (about)	10	00
	349	49 = £17 2s. 8d.

GEESTEMÜNDE.

Geestemünde is in lat. 53°31' N., long. 8°36' E.

Population.—23,621.

Imports.—Cotton, rice, lumber, and timber.

Exports.—Cement, coke, salt, and general merchandise.

Accommodation.—Every ship about to enter the harbour must,
 en in the road outside the buoys, make a signal by hoisting two flags,
 e above the other, on the mainmast, and at the same time hoist her national
 g. As soon as a ship entering has passed through the sluice, or arrived
 her anchorage in the Geeste, the master must report the fact, or cause
 to be reported to the harbour-master. Thereupon the certificate of
 istry and the articles of agreement with the crew must be produced ;
 e name of the ship, port of departure, and a general statement of the
 ture and destination of the cargo must be furnished. There are exten-
 e docks and warehouses, and the railway runs alongside the ships' berths.

Dry Docks.	Available Docking Length in feet.	Breadth at Entrance in feet.	Water on Sill H.W. Ordinary Springs, in feet.	
J. Tecklenborg's graving)	{ 350 } { 223 }	45½	16	{ Can take two vessels at once , 3,800 tons and 1,500 tons.
beck's No. 1	{ 335 } { 135 }	40½	15	{ Can take two vessels at once , 3,000 tons and 1,500 tons.
ent Slip	120 (cradle)	On blocks	Forward 9 Aft. . 17	Lifting power, 250 tons.

Wet Docks.—The Geestemünde dock is 26½ acres in area, 1,734 ft.
 g, 400 ft. wide, and 25 ft. deep. The entrance at high water ordinary
 ings is 76½ ft. wide, and 25 ft. deep. The quay is 3,600 ft. long, and
 s 22 cranes on it, from 1 to 20 tons lifting power. Geestemünde Canal
 in communication with the dock, and is 2,600 ft. long, 145 ft. wide, and
 ft. deep. There is a quay 6,000 ft. long. Fischereihafen is a tidal harbour
 trawlers. It is 361 ft. wide at the entrance, and has a depth of 14 ft.
 n. at low tide. There is a quay 4,600 ft. long. There are four building
 rds, one being capable of building the largest iron vessels, either sailing
 steam.

Pilotage.—Compulsory. Rates are according to the size of the vessel.

Germany—Geestemünde (*continued*).

Up to 240 cubic metres, 3 mk.; 240 to 480 cubic metres, 3 mk. 75 pf.; 480 to 1,200 cubic metres, 5 mk. 50 pf.; 1,200 to 2,000 cubic metres, 7 mk. 50 pf. 2,000 to 3,000 cubic metres, 10 mk.; 3,000 to 4,000 cubic metres, 12 mk. 4,000 to 6,000 cubic metres, 15 mk.; 6,000 to 8,000 cubic metres, 18 mk. over 8,000 cubic metres, 20 mk.

Large vessels have to take two pilots by order of the harbour-master also small vessels on account of ice, stormy weather, etc., if the harbour master so orders.

Port Charges.—Harbour Dues:—For steamers and lighters over 200 cubic metres, for 15 days, 4 pf. per cubic metre; for every additional 15 days, 1 pf. per cubic metre. Other ships, over 200 cubic metres, for 15 days, 3 pf. per cubic metre; for every additional 15 days, 1 pf. per cubic metre. Vessels going into the Geestemünde dry docks are free of harbour dues. Vessels undergoing repairs at the wharves or elsewhere, and which do not remain 8 days in the harbour, in addition to the time they are under repairs, pay one half of the harbour dues. Vessels which have left the harbour, and been obliged to turn back on account of storms, damage, or ice drifts, are counted as if the second turn in harbour was a continuation of the first. **Towage:**—40 to 60 mk. per tug. **Light Dues:**—Steamers, 14 pf. sailing vessels, 10 pf. per cubic metre. **Boat Hire:**—For vessels up to 8,000 cubic metres and over, moving in dock, 9 mk.; from roads to dock and vice versa, 16 mk. **Ballast:**—2 mk. 50 pf. per ton free on board. **Labour:** 5 mk. **Brokerage** as per agreement.

Pro Forma Charges on a steamer of 2,228 net reg. tons, with a cargo of 7,174 bales cotton and 3,350 tons phosphate, from Brunswick discharging at Geestemünde:—

	Mk.	Pf.
Inward pilotage, 6-9 metres at 25 mk. 40 pf. = 175 mk. 26 pf. :		
gratuity to pilot, 15 mk.	190	26
Advertising order-parcels of cargo	12	00
Notary, drawing up power of attorney to collect freight	18	60
Dock dues, including extra charges for running lines, dock pilotage, etc.	517	49
Light and beacon dues	854	84
Consul fees	2	60
Outward pilotage, 4 metres at 20 mk. 10 pf.	80	40
Tug-assistance in, two tugs }	285	60
Tug-assistance out, two tugs }		
Stevedore's bill for discharging cargo, etc., 10s. per 100 bales square cotton; 8d. per 1,000 kg. phosphate, and various extra labour	3,655	40
Tally clerks for checking delivery of cargo, 5s. per 100 bales square cotton, 1d. per 1,000 kg. phosphate	667	35
Consignees for mending bales, 1 mk. 30 pf. per 100 bales	93	25
Telegrams, postage, and petties	59	85
Agency fee, including clearance at Custom House and collection of freight, as per charter party, £11 at 20 mk. 49 pf.	225	40

6,663 04 = £326 12s. 6d.

GEVERSDDORF.

Geversdorf, in lat. 53°49' N., long. 8°59' E., about 19 miles east of Cuxhaven, is situated on the river Oste, which is a tributary of the Elbe about 5 miles from the mouth.

Population.—1,200.

Accommodation.—There is 8 ft. of water in the harbour, and the port is only frequented by small vessels.

Germany—Geversdorf (continued).

Pilotage.—Not compulsory.

Port Charge.—The only port due is a charge of about 3s. per 20 tons reg., which clears for twelve months.

GLÜCKSTADT.

Glückstadt, in lat. 53°49' N., long. 9°23' E., is on the right bank of the Elbe, 30 miles from the mouth. It is a safe port.

Population.—6,218.

Imports.—Coal, wood, and grain.

Exports.—Straw, oilcake, etc.

Accommodation.—The tidal harbour can be reached by vessels drawing not more than 20 to 22 ft. at high water, ordinary springs. The length is 1,500 ft. and the breadth 165 ft. There is 600 ft. of quayage for discharging and several small cranes. The inner harbour is 2,000 ft. long by 165 ft. wide, with a depth at high water ordinary springs of 16 ft. Vessels drawing more than 6 ft. cannot reach Glückstadt at low water.

Pilotage.—1 mk. 20 pf. per foot in, and 60 pf. per foot out.

Towage:—In ballast 10 pf. per cubic metre; with general cargo 20 pf. Towage from Cuxhaven by agreement, from £3 to £5.

Port Charges.—Steamers coming in with coal and leaving in ballast pay 12 pf. per cubic metre; sailing vessels, 10 pf. Steamers coming in with wood, grain, and general cargo, and leaving in ballast, pay 18 pf. per cubic metre. Sailing vessels, 15 pf. The charge made for vessels lying up during the winter is 5 pf. per month per cubic metre. Vessels taking shelter during stormy weather can lie free of charge for fourteen days before paying dues.

GREETSIEL.

Greetsiel is a small port 7 miles S.W. of Norden, in lat. 53°30' N., long. 7°7' E.

Accommodation.—There is only 9½ to 12 ft. at high water. There is no pilot, but a fisherman is generally taken to act as one, and is paid by agreement.

Dues and Charges on a schooner of 83 tons reg., ballast in and cargo of oats out, drawing 9 ft., about £5 18s. 6d. As this vessel came from another German port, her expenses were 15s. less than they would otherwise have been.

GREIFSWALD.

Greifswald, in lat. 54°6' N., long. 13°23' E., is situated on the river Ryck, about 2½ miles from Daenische Bay.

Population.—23,767.

Import.—Coal.

Export.—Wheat.

Accommodation.—The harbour has an area of 8 acres, with about 1,000 ft. of quayage on which there is one crane. The depth at the entrance and quayside is 12½ ft. There is a common slipway, with suitable lifting power for vessels visiting the harbour.

Germany—Greifswald (*continued*).

Pilotage.—For a vessel of 500 cubic metres, Thissow to Wiek roads, 18 mk. 75 pf.

Port Dues.—With cargo of coal inwards or in ballast, in or out, 5 pf. per cubic metre. With corn or wood out, 10 pf. per cubic metre.

Shipbroker :—Clearance, 5 pf. per cubic metre. **Discharging Ballast** :—3 pf. per cubic metre ; **Loading**, 7 pf. per cubic metre.

HAMBURG.

Hamburg, in lat. 53°35' N., long 10°1' E., is situated on the right bank of the river Elbe, about 70 English miles from the mouth of the river.

Population.—802,793.

Imports.—General. Of bulk articles, the following might be specially mentioned :—Grain, coal, phosphate, nitrate, cotton, coffee, petroleum, hides, quebracho, and other tropical and semi-tropical woods, pitch pine, deals, battens, etc.

Exports.—Machinery, manufactured goods, rock salt, cement, and sugar.

Accommodation.—Steamers drawing 30 ft. have no difficulty in reaching Hamburg direct at ordinary high water, especially with north-westerly wind. The navigable channel leading to Hamburg has been greatly deepened with the intention of attaining a depth of water sufficiently deep to allow the largest craft afloat free access to Hamburg without necessitating lightening below. The city of Hamburg is the largest shipping port on the Continent, with numerous docks, patent slips, shipbuilding wharfs, engine works, spacious quays with all modern appliances for quick dispatch, and commodious dry docks able to lift the largest craft afloat. Vessels arriving with bulk cargoes, such as grain, coal, nitrate, phosphate, etc., or loading outwards with sugar, rock salt, cement, etc., invariably load or discharge in the river. This port, which in times gone by was closed for weeks and months by ice, may at present be considered an ice-free port, owing to the powerful ice breakers kept by the Free State of Hamburg, which keep an open roadstead whenever frost sets in. Discharging or loading in the river may, for a few days during very hard frost, be impeded, but not to any great extent, owing to the incessant traffic of large and small craft. The harbour regulations for the discharge of vessels are as follows :—

A.—SAILING SHIPS.

Summer. 3 days	Winter. 3 days	up to	30 net reg. tons.
4 "	4 "	"	50 " "
5 "	5 "	"	75 " "
6 "	6 "	"	100 " "
7 "	7 "	"	125 " "
7 "	8 "	"	150 " "
8 "	9 "	"	200 " "
9 "	10 "	"	250 " "
10 "	11 "	"	300 " "
11 "	12 "	"	350 " "
12 "	13 "	"	400 " "
13 "	14 "	"	450 " "
13 "	15 "	"	500 " "
14 "	16 "	"	600 " "
15 "	17 "	"	700 " "
16 "	18 "	"	800 " "

Germany—Hamburg (*continued*).**A.—SAILING SHIPS—continued.**

Summer.	Winter.	up to	850 net reg. tons.
17 days	19 days		
17	20	"	900
18	21	"	1,000
19	22	"	1,200
20	23	"	1,300
20	24	"	1,400
21	25	"	1,600
22	26	"	1,800
23	27	"	1,900
23	28	"	2,000
24	29	"	2,200
25	30	"	2,400
26	31	"	2,500
26	32	"	2,600
27	33	"	2,800
28	34	"	2,950
28	35	"	3,100
29	36	"	3,400
30	37	"	3,550
30	38	"	3,700
31	39	"	4,000
32	40	"	4,150
32	41	"	4,300
33	42	"	4,600
34	43	"	4,800
34	44	"	5,000

And one additional day for each additional 400 net reg. tons.

B.—STEAMERS.

Summer.	Winter.	up to	General.	Nitrate.	Grain, Peas, Beans, etc., Seeds in bulk.
			Net reg. tons.		
3 days	4 days		200	200	200
4	5	"	300	300	400
5	6	"	400	400	600
6	7	"	600	600	800
7	8	"	800	800	1,100
8	9	"	1,000	1,000	1,400
9	10	"	1,300	1,200	1,800
10	11	"	1,600	1,400	2,200
11	12	"	1,700	1,500	2,400
11	13	"	1,900	1,600	2,700
12	14	"	2,300	1,800	3,200
13	15	"	2,500	1,950	3,500
13	16	"	2,700	2,100	3,800
14	17	"	3,100	2,400	4,400
15	18	"	3,300	2,550	4,700
15	19	"	3,500	2,700	5,000
16	20	"	4,000	3,000	5,600
17	21	"	4,200	3,150	5,900
17	22	"	4,500	3,300	6,200
18	23	"	5,000	3,600	6,800
19	24	"	5,200	3,800	7,100
19	25	"	5,500	4,000	7,400

And one additional day for each additional 600 net reg. tons for bulk grain, bulk peas and beans, and bulk seed, or one additional day for each additional 500 net reg. tons for other goods.

The above regulations are for vessels arriving with cargo for one receiver. Sundays and holidays excepted. The time between October 31 and March 1 is considered winter months. Time for discharge to begin the day after the ship's readiness has been advertised in the local papers for goods arriving to "order," and when there are more receivers than one.

Germany—Hamburg (*continued*)**GRAVING DOCKS.**

	Length in Feet.	Docking Length in Feet on Blocks.	High Water Ordinary Springs.		Lifting Power in Tons.
			Width at Entrance in Feet.	Depth on Sill in Feet.	
Blohm & Voss' Floating No. 1 . . .	325	—	52	21½	3,000
" " " No. 2 . . .	350	—	60½	21½	4,500
" " " Steel No. 3 . . .	560	—	88	32	17,000
" " " No. 4 . . .	590	—	111	29	17,500
Hamburg-American Packet Co.'s Graving . . .	400	—	50	18	—
A. G. Stulcken's Floating No. 1 . . .	269	—	39	13	1,000
" " " No. 2 . . .	210	—	45	14	1,000
" " " No. 3 . . .	457	—	60	19	6,200
B. Winche's Graving . . .	260	—	50	14	—
Reihersteig, Floating No. 1 . . .	—	340	64	20	4,500
" (C. & S. type) No. 2 . . .	—	508	76	—	11,000
Brandenburg Floating . . .	489	472	64	—	7,000
Four Patent Slips . . .	—	120-240	—	6-10 forward, 11-20 aft on the blocks.	1,050, 1,150 can be taken on the slips.

Blohm and Voss' docks Nos. 1, 2, and 4 are in three sections. No. 3 is in one section, with seven pontoons. No. 3 combined with one section of No. 4 gives a length of 754 ft. and a lifting power of 22,500 tons. The Hamburg-American Packet Co.'s dock is for the use of the company's ships only. The Vulcan Shipbuilding Co. are constructing a yard with five building slips, and will be able to build and repair the largest vessels.

TIDAL DOCKS.

	Area in Acres.	Length in Feet.	Width in Feet.	Width at En- trance in Feet.	Depth at En- trance, Ord- inary Springs, in Feet.		Length of Quayage in Feet.	Depth alongside Quay, Ordinary Springs, in Feet.	
					High Water.	Low Water.		High Water.	Low Water.
Niederhafen . . .	12½	—	—	—	25	18·5	—	25	18·5
Johannisbollwerk . . .	—	—	—	—	—	—	1,000	—	—
Sandthorhafen . . .	24½	3,412	382	251	24·9	18·4	6,752	24·9	18·4
Schiffbauhafen . . .	3	—	—	—	25·8	19	604	25·8	19
Grasbrookhafen . . .	16	—	492	276	25·8	19	5,002	25·8	19
Strandhafen . . .	8½	—	—	—	25-27	19-20	1,738	25-27	19-20
Magdeburgerhafen . . .	6	—	—	—	22·9	16·4	—	22·9	16·4
Baakenhafen . . .	43½	—	—	—	25-27	19-20	8,875	25-27	19-20
Kirchenpauerhafen . . .	20	—	—	—	25	18·6	3,879	25	18·6
Segelschiffhafen . . .	85½	4,429	919	525	27	20	902 at en- trance 9,592 in dock	27	20
Hansahafen . . .	90½	5,348	1,328	410	27	20	7,106	27	20
Indiahafen . . .	27	2,790	460	395	27	20	5,710	27	20
Petroleumhafen . . .	19	2,624	328-722	—	27	20	—	27	20
Kaiser-Wilhelmhafen . . .	—	3,400	756	660	31	25	7,750	31	25
Ellerholzhafen . . .	—	3,400	—	500	31	25	3,000	31	25
Kohlenschiffhafen . . .	for coal	3,965	—	—	26·5	20·5	nil	—	—
Fischereihafen . . .	for trawlers and smacks	—	—	—	—	—	400	20	12
Kuhwärder Harbour . . .	—	3,450	790	660	30	24	nil	—	—

Cranes of all kinds and powers.

Time Signals.—Chronometers can be checked here once a day. A black ball, 5 ft. in diameter, 180 ft. above high water, with a drop of 5 ft.,

Germany—Hamburg (*continued*).

s used as a signal. The ball is hoisted half-way up 10 minutes before time, and close up 3 minutes before time. The signal is situated on the Kaiser Quay.

Lat. 53°32'30" N.	Greenwich mean time.	Local mean time.
Long. 9°58'54" E.	} 24 00 00	0 39 55.6

The signal is given at noon and 1 p.m. Mid-European time, corresponding to 11 a.m. and noon Greenwich mean time.

Pilotage.—Inward pilotage payable according to draught, as per scale given below. Winter tariff is enforced from October 1 to March 31.

SCALE FOR INWARD PILOTAGE.

Admiralty Pilotage=Sea Pilotage to Brunsbüttel.

Draught.	Summer Tariff.	Winter Tariff.	Draught.	Summer Tariff.	Winter Tariff.
Decim.	Mk.	Mk.	Decim.	Mk.	Mk.
10	25	35			
11	26	36	51	121	163
12	27	37	52	127	171
13	28	38	53	133	179
14	29	39	54	139	187
15	30	40	55	145	195
16	31	41	56	152	204
17	32	42	57	159	213
18	33	43	58	166	222
19	34	44	59	173	231
20	35	45	60	180	240
21	36	47	61	187	250
22	37	49	62	194	260
23	38	51	63	201	270
24	39	53	64	208	280
25	40	55	65	215	290
26	41	57	66	221	298
27	42	59	67	227	306
28	43	61	68	233	314
29	44	63	69	239	322
30	45	65	70	245	330
31	47	68	71	250	337
32	49	71	72	255	344
33	51	74	73	260	351
34	53	77	74	265	357
35	55	80	75	270	364
36	58	84	76	274	370
37	61	88	77	278	376
38	64	92	78	282	382
39	67	96	79	286	388
40	70	100	80	290	394
41	74	105	81	293	399
42	78	110	82	296	404
43	82	115	83	299	409
44	86	120	84	302	414
45	90	125	85	305	419
46	95	131	86	308	423
47	100	137	87	311	427
48	105	143	88	314	431
49	110	149	89	317	435
50	115	155	90	320	439

Germany—Hamburg (continued).*Pilotage from Brunsbüttel to Hamburg.*

English Feet and Inches.		Metres and Centimetres.		Pilotage.	
1 in.	=	2½ ctm.	=	31.9 pf.	
2 "	=	5 "	=	63.8 "	
3 "	=	7½ "	=	95.7 "	
4 "	=	10 "	=	1 mk. 27.6 "	
5 "	=	12½ "	=	1 " 59.5 "	
6 "	=	15 "	=	1 " 91.4 "	
7 "	=	17½ "	=	2 " 23.3 "	
8 "	=	20 "	=	2 " 55.2 "	
9 "	=	22½ "	=	2 " 87.1 "	
10 "	=	25 "	=	3 " 19 "	
11 "	=	27½ "	=	3 " 50 "	
1 ft.	=	30½ "	=	3 mk. 83 pf. plus 3 mk. 60 pt.	= 7 mk. 43 pt.
2 "	=	61 "	=	7 " 66 "	= 11 " 26 "
3 "	=	91½ "	=	11 " 49 "	= 15 " 09 "
4 "	=	1 metre 22 "	=	15 " 32 "	= 18 " 92 "
5 "	=	1 " 52½ "	=	19 " 15 "	= 22 " 75 "
6 "	=	1 " 83 "	=	22 " 98 "	= 26 " 58 "
7 "	=	2 metres 13½ "	=	26 " 81 "	= 30 " 41 "
8 "	=	44 "	=	30 " 64 "	= 34 " 24 "
9 "	=	2 " 74½ "	=	34 " 47 "	= 38 " 07 "
10 "	=	3 " 05 "	=	38 " 30 "	= 41 " 90 "
11 "	=	3 " 35½ "	=	42 " 13 "	= 45 " 73 "
12 "	=	3 " 66 "	=	45 " 96 "	= 49 " 56 "
13 "	=	3 " 96½ "	=	49 " 79 "	= 53 " 39 "
14 "	=	4 " 27 "	=	53 " 62 "	= 57 " 22 "
15 "	=	4 " 57½ "	=	57 " 45 "	= 61 " 05 "
16 "	=	4 " 88 "	=	61 " 28 "	= 64 " 88 "
17 "	=	5 " 18½ "	=	65 " 11 "	= 68 " 71 "
18 "	=	5 " 49 "	=	68 " 94 "	= 72 " 54 "
19 "	=	5 " 79½ "	=	72 " 77 "	= 76 " 37 "
20 "	=	6 " 10 "	=	76 " 61 "	= 80 " 21 "
21 "	=	6 " 40½ "	=	80 " 44 "	= 84 " 04 "
22 "	=	6 " 71 "	=	84 " 27 "	= 87 " 87 "
23 "	=	7 " 01½ "	=	88 " 10 "	= 91 " 70 "
24 "	=	7 " 32 "	=	91 " 93 "	= 95 " 53 "
25 "	=	7 " 62½ "	=	95 " 76 "	= 99 " 36 "
26 "	=	7 " 93 "	=	99 " 59 "	= 103 " 19 "
27 "	=	8 " 23½ "	=	103 " 42 "	= 107 " 02 "
28 "	=	8 " 54 "	=	107 " 25 "	= 110 " 85 "
29 "	=	8 " 84½ "	=	111 " 08 "	= 114 " 68 "
30 "	=	9 " 15 "	=	114 " 92 "	= 118 " 52 "

Pilotage for 1 metre = 12 mk. 56 pf.

OUTWARD PILOTAGE.

The outward pilotage is based on the following tariff (ships to be served in turn) :—

English Feet and Inches.		Metres and Centimetres.		Hamburg Feet and Inches.		Pilotage per Hamburg Foot at 3 mk. 60 pf.	
1 in.	=	2½ ctm.	=	1½ in.	=	0 mk. 32 pf.	
2 "	=	5 "	=	2½ "	=	0 " 64 "	
3 "	=	7½ "	=	3½ "	=	0 " 96 "	
4 "	=	10 "	=	4½ "	=	1 " 28 "	
5 "	=	12½ "	=	5½ "	=	1 " 60 "	
6 "	=	15 "	=	6½ "	=	1 " 91 "	
7 "	=	17½ "	=	7½ "	=	2 " 23 "	
8 "	=	20 "	=	8½ "	=	2 " 55 "	
9 "	=	22½ "	=	9½ "	=	2 " 87 "	
10 "	=	25 "	=	10½ "	=	3 " 19 "	
11 "	=	27½ "	=	11½ "	=	3 " 51 "	
12 "	=	30½ "	=	12½ "	=	3 " 83 "	
1 ft.	=	30½ "	=	1 ft.	=	3 " 83 "	
2 "	=	61 "	=	2 "	=	7 " 66 "	
3 "	=	91½ "	=	3 "	=	11 " 49 "	
4 "	=	1 metre 22 "	=	4 "	=	15 " 32 "	
5 "	=	1 " 52½ "	=	5 "	=	19 " 15 "	
6 "	=	1 " 83 "	=	6 "	=	22 " 98 "	
7 "	=	2 metres 13½ "	=	7 "	=	26 " 81 "	

Germany—Hamburg (*continued*).**OUTWARD PILOTAGE—continued.**

English		Hamburg		Pilotage per Hamburg	
Feet and Inches.	Metres and Centimetres.	Feet and Inches.		Foot at 3 mk. 60 pf.	
8 ft. =	2 metres 44 ctm. =	8 ft. 6 $\frac{1}{8}$ in. =		30 mk. 64 pf.	
9 " =	2 " 74 $\frac{1}{2}$ " =	9 " 6 $\frac{3}{8}$ " =		34 " 47 "	
10 " =	3 " 5 " =	10 " 7 $\frac{5}{8}$ " =		38 " 30 "	
11 " =	3 " 35 $\frac{1}{2}$ " =	11 " 8 $\frac{3}{8}$ " =		42 " 13 "	
12 " =	3 " 66 " =	12 " 9 $\frac{1}{8}$ " =		45 " 96 "	
13 " =	3 " 96 $\frac{1}{2}$ " =	13 " 9 $\frac{5}{8}$ " =		49 " 79 "	
14 " =	4 " 27 " =	14 " 10 $\frac{1}{8}$ " =		53 " 62 "	
15 " =	4 " 57 $\frac{1}{2}$ " =	15 " 11 $\frac{1}{8}$ " =		57 " 45 "	
16 " =	4 " 88 " =	17 " 0 $\frac{3}{8}$ " =		61 " 28 "	
17 " =	5 " 18 $\frac{1}{2}$ " =	18 " 0 $\frac{5}{8}$ " =		65 " 11 "	
18 " =	5 " 49 " =	19 " 1 $\frac{1}{8}$ " =		68 " 94 "	
19 " =	5 " 79 $\frac{1}{2}$ " =	20 " 2 $\frac{1}{8}$ " =		72 " 77 "	
20 " =	6 " 10 " =	21 " 3 $\frac{1}{8}$ " =		76 " 61 "	
21 " =	6 " 40 $\frac{1}{2}$ " =	22 " 4 " =		80 " 44 "	
22 " =	6 " 71 " =	23 " 4 $\frac{3}{8}$ " =		84 " 27 "	
23 " =	7 " 1 $\frac{1}{2}$ " =	24 " 5 $\frac{1}{8}$ " =		88 " 10 "	
24 " =	7 " 32 " =	25 " 6 $\frac{3}{8}$ " =		91 " 93 "	
25 " =	7 " 62 $\frac{1}{2}$ " =	26 " 7 $\frac{1}{8}$ " =		95 " 76 "	
26 " =	7 " 93 " =	27 " 7 $\frac{3}{8}$ " =		99 " 59 "	
27 " =	8 " 23 $\frac{1}{2}$ " =	28 " 8 $\frac{1}{2}$ " =		103 " 42 "	
28 " =	8 " 54 " =	29 " 9 $\frac{3}{8}$ " =		107 " 25 "	
29 " =	8 " 84 $\frac{1}{2}$ " =	30 " 10 $\frac{1}{8}$ " =		111 " 08 "	
30 " =	9 " 15 " =	31 " 10 $\frac{3}{8}$ " =		114 " 92 "	

to which must be added :—

For every ton net reg. of the ship up to and including 2,000 tons	. . . . .	4 pf.
For every further ton up to and including 3,000 tons	. . . . .	3 "
" " " " " 4,000	. . . . .	2 "
" " " " " over 4,000 tons	. . . . .	1 "

Towage.—Large and powerful tugs are always to be had. Price of tugboat assistance to steamers in the harbour of Hamburg-Altona as per tariff below :—

Up to 1,000 tons gross register	. . . . .	30s. each tug.
1,001 to 1,500 " " " "	. . . . .	35s. " "
1,501 " 2,000 " " " "	. . . . .	40s. " "
2,001 " 3,000 " " " "	. . . . .	45s. " "
3,001 " 4,000 " " " "	. . . . .	50s. " "
More than 4,000 " " " "	. . . . .	60s. " "
Coal steamers discharging below St. Pauli	. . . . .	25s. " "

In addition to the above rates, 25 per cent. extra will be charged from November 1 till March 31, and 50 per cent. extra will be charged in times of ice.

Port Charges.—The quay expenses are 1 mk. per ton of 1,000 kilos. Vessels discharging part cargo on the quay and part in the stream only pay for the number of tons actually discharged on the quay. Of these quay expenses, 70 pf. are paid by the vessel and 30 pf. by the receivers, if the bill of lading does not stipulate for one of the parties to pay the full amount. In addition to the 1 mk., vessels have to pay the following charges : For loading ^{and} or discharging, for the first five times, 17 $\frac{1}{2}$ pf. per net cubic metre for 24 hours ; for each succeeding 24 hours or part thereof, 3 $\frac{1}{2}$ pf. per net cubic metre. **Weighing Expenses:**—When fixing vessels for pig iron, ice, and other cargoes requiring to be weighed at Hamburg, owners would do well to insert in the charter : " All weighing expenses at port of discharge to be borne by receivers, any custom of the port notwithstanding." **Ballast:**—Sand ballast can always be had, the price fluctuating between 1 mk. 40 pf. and 1 mk. 60 pf. per ton in summer time, and 2 mk. and 2 mk. 50 pf. per ton in winter time. **Water:**—Fresh water can be had at 1 mk. per ton of 1,000 kilos. **Tonnage Dues:**—Vessels arriving from

Germany—Hamburg (*continued*).

the sea pay 12 pf. per net cubic metre capacity, except those arriving with coal, cinders, coke, patent fuel, wood for building purposes, cement, herrings, salt, chalk, live cattle, stones, and a few more articles, when only 6 pf. per net cubic metre is charged. All vessels, 120 cubic metres or smaller, pay 6 pf. only. Vessels which come and leave in ballast, and those which are built in Hamburg, and load outwards, are exempt from paying tonnage dues. The latter are only exempt for the first voyage. **Loading and Discharging:**—The following is the tariff of the Hamburg stevedores:—

LOADING.*Sailing Ships.*

Goods.	Rate.	Per
For taking over and stowing of general cargo	80 pf.	Cubic metre
„ salt cargoes	70 „	1,000 kilos.
„ fire bricks	5 mk.	1,000 pieces.
„ bricks and small tiles	4 „	„
„ large tiles	100 pf.	1,000 kilos.
„ scrap iron	120 „	„
„ rails and bar iron	100 „	„
„ acid	90 „	„
„ coal	80 „	„
„ coke	90 „	„
„ patent fuels	110 „	„

Steamers.

For cargoes—sugar	65 pf.	1,000 kilos.
„ „ salt	70 „	„
„ „ nitrate	70 „	„
„ „ to Siberia	90 „	„
For working overtime and on Sundays, 10 mk. per gang per hour to be paid extra.		

DISCHARGING.*Sailing Ships.*

Goods.	Rate.	Per
Nitrate up to two gangs	75 pf.	1,000 kilos.
„ for the third gang	80 „	„
Rice	70 „	„
Guano in bulk	150 „	„
Meat meal and fish guano	80 „	„
Walnut and mahogany logs	130 „	„
Cedar logs	130 „	Load.
Pitch pine	130 „	„
Fustic and Laguna wood	130 „	1,000 kilos.
Logwood and Lima wood	130 „	„
Dyewood roots	150 „	„
Quebracho wood	130 „	„
Teak	150 „	40 cub. ft.
Coffee	65 „	1,000 kilos.
Ivory nuts in bulk	120 „	„
Palm kernels „	80 „	„
Copra „	120 „	„
All kinds of grains and legumes	75 „	„
Linseed and rapeseed	75 „	„
Oil-cake in bulk	100 „	„
„ „ bags	80 „	„
Cottonseed meal in bags	75 „	„
Cotton, from the East Indies, and jute	75 „	5 bales.
Salted hides and skins	25 mk.	1,000 pieces.
Horns in bulk	3 „	„
Bone ash in bulk	150 pf.	1,000 kilos.
Bones	200 „	„
Phosphate and ore	100 „	„
Naval stores and pitch in barrels	80 „	„
Asphaltum and pitch	200 „	„
Rice polish	80 „	„
Tanning stuffs: Valonea, gallnuts, dividivi, myrobolans	120 „	„
Wool from Australia and Cape	35 „	Bale.
Ice	100 „	1,000 kilos.
For working overtime and on Sundays, 10 mk. per gang per hour to be paid extra.		

Germany—Hamburg (continued).*Steamers.*

Goods.	Rate.	Per	
Grain (oats excluded), maize, and legumes for discharging by elevator to be paid as per elevator tariff	65 pf.	..	1,000 kg. } Trimming to be paid extra.
Oats	75	"	"
Bran in bags	100	"	"
" " bulk	120	"	"
Rice	65	"	1,000 kg.
Rice-meal	80	"	"
Cargoes from U.S. if discharged in the harbour—			
(a) Bag goods	70	"	"
(b) Lard, oil, etc.	80	"	"
(c) Wood and staves	120	"	"
Cargoes from U.S. if discharged at the quay—			
Including lard, oil, etc.	55	"	"
Wood and staves	80	"	"
American cotton, if discharged in the harbour	30	"	Bale.
American cotton, if discharged at the quay	20	"	"
Phosphate and ore	75	"	1,000 kilos.
Pig-iron stowed	65	"	"
Pig-iron not stowed	75	"	"
Pig-lead	65	"	"
Palm-kernels in bulk	75	"	"
Linseed and rapeseed	70	"	"
Oil-cake in bulk—			
From Marseilles	100	"	"
" the Black Sea	90	"	"
Cargoes, if discharged at the quay—			
From Bombay	45	"	"
" Calcutta	50	"	"
Cargoes, if discharged in the harbour—			per manifest ton.
From Bombay	80	"	"
" Calcutta	100	"	"
Rattans	75	"	350 kilos.
Herrings	55	"	7 barrels.
Herrings in cases and tubs	8	"	The package
Swedish timber, boards	300	"	Standard of
" " deals	250	"	165 cub. ft.
Quebracho wood	90	"	1,000 kilos.
Pitch pine	90	"	Load.
Nitrate	70	"	1,000 kilos.
Wool: From Australia	50	"	5 bales.
" river Plate	30	"	Bale.
Dry hides	150	"	1,000 kilos.
Fire bricks	120	"	"
Fruit	80	"	"
Pavement stones	65	"	"
Iron bearers and bar iron	120	"	"
Ice	80	"	"
Hay and straw in pressed packed bales	80	"	"
Cork-wood	75	"	700 kilos.
Asphaltum: From Trinidad	150	"	1,000 kilos.
" the Mediterranean	90	"	"

For working overtime and on Sundays, 10 mk. per gang per hour to be paid extra.

All other articles not named above according to special agreement. The ship to find steam and necessary ropes according to the custom of the port. The stevedore to find all winch-men. Accidents to stevedore's men employed on board are at the stevedore's risk, he being bound by law to insure the men, the cost of premium to be paid with 15 mk. up to 1,000 tons net reg., 30 mk. above 1,000 tons net reg. The ship to bear the risk and expenses for booming off. Spar hire, 30 mk. All extra expenses for wages and food incurred by discharging and loading on the lower Elbe to be paid by the ship. Moving the ship on work days, 5 mk. each man required. All extra labour for trimming and separating grain parcels, or for taking cargo out of peaks and lazaret, if discharged by hand, is to be paid with 3 mk. per man per day. Federation tax, $1\frac{1}{2}$ per cent. of stevedore's account.

Germany—Hamburg (continued.)

DISBURSEMENTS OF STEAMERS AT HAMBURG.

	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.
	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.	Mk. pf.
inward pilotage	187 80	192 70	156 05	162 19	87 65	217 55	276 80	322 45	287 45	352 10	300 00	292 05	304 05	372 40	467 60
Outward pilotage	60 00	70 00	60 00	70 00	71 40	80 00	81 60	108 50	122 40	100 00	140 00	81 60	153 00	236 50	150 05
Harbour pilot and boatman	—	10 00	—	10 00	15 00	30 00	20 00	20 00	35 00	20 00	30 00	30 00	30 00	30 00	30 00
Harbour-master's fee	25 00	25 00	25 00	25 00	—	25 00	30 00	30 00	30 00	30 00	30 00	30 00	30 00	35 00	35 00
Towage	40 00	40 00	40 00	40 00	40 00	120 00	81 60	160 00	163 20	122 00	81 60	120 00	163 20	204 00	306 00
Tonnage dues	87 42	172 57	80 76	82 12	106 14	319 10	547 92	638 85	652 32	673 12	660 24	718 56	709 80	834 95	908 52
Tally clerk's account	—	—	—	—	—	114 75	204 75	336 40	358 20	422 00	349 70	236 00	285 10	534 15	415 20
Stevedore's account	1,902 80	618 00	1,753 42	746 39	1,409 40	1,233 10	2,308 50	2,576 60	3,104 00	5,210 00	2,574 50	2,916 40	2,705 55	5,835 60*	3,867 75
Surveyors examining hatchways	—	—	—	—	—	20 00	20 00	20 00	—	20 00	20 00	60 00	20 00	20 00	20 00
Advertisements	7 80	—	—	—	—	—	16 50	13 30	10 70	27 40	28 80	13 30	37 95	11 60	9 60
Consul's fees	11 20	27 80	17 00	—	2 60	12 30	10 25	12 75	137 32	92 12	10 25	12 50	10 25	10 20	10 25
	2,822 02	1,156 07	2,132 23	1,135 70	1,732 19	2,171 80	3,087 92	4,236 85	4,900 59	7,068 74	4,225 09	4,510 41	4,518 90	8,124 40	6,220 57
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	113 13 3	56 11 9	104 7 5	55 11 5	84 15 8	106 6 0	180 10 3	207 7 9	239 17 6	346 0 0	206 17 5	220 15 6	221 3 9	397 13 6	304 9 6

For steamers discharging on the quay, the quay dues will have to be added.

* By elevators.

Germany—Hamburg (continued).

Ship-owning:—Hamburg is the largest ship-owning port in the world outside of Great Britain. The fleet of Hamburg vessels consisted of 376 steamers, with a net register tonnage of 1,248,114 tons, and 485 sailing ships, with a net register tonnage of 270,083 tons, on January 1, 1908.

DISBURSEMENTS.

For the benefit of steamers trading to Hamburg, a list of disbursements is given on page 234 for several boats of different sizes. The figures given form the actual outlays for boats having discharged ^{and}/_{or} loaded at Hamburg:—

A.	900	tons cargo	discharging pig iron, loading outwards with general cargo.
B.	950	" "	" " and leaving in ballast.
C.	1,000	" "	" " coals, and leaving with pit props.
D.	1,050	" "	" " " in ballast.
E.	1,400	" "	arriving in ballast and leaving with general cargo.
F.	2,200	" "	" " from a Black Sea port with grain and leaving in ballast.
G.	3,200	" "	" " with phosphate from Florida and leaving in ballast.
H.	3,800	" "	" " from Azov with grain and leaving in ballast.
I.	3,950	" "	" " the Gulf with pitch pine, resin, deals, etc., and leaving in ballast.
J.	4,100	" "	" " " " with pitch pine, and deals, and leaving for the U.S. with rock salt.
K.	4,350	" "	" " " " with pitch pine and deals and leaving in ballast.
L.	4,800	" "	" " with grain from the Northern Range and leaving in ballast.
M.	5,500	" "	" " from the Gulf with grain and leaving in ballast.
N.	6,000	" "	" " from a Black Sea port with grain and leaving in ballast.
O.	6,500	" "	" " from Rangoon with rice and rice-bran and leaving in ballast.

HARBURG.

Harburg, in lat. 53°27' N., long. 10°0' E., near Hamburg, is situated on the main Elbe fairway, and being on the southern arm of the Elbe it occupies a position suitable for the distribution of goods into the interior.

Population.—55,676.

Imports.—Coal, slates, phosphate, nitrate, china clay, wood, palm kernels, linseed, coke, bricks, tar, jute, iron, asphalt, paraffin, corn, sulphur, ore, herrings, copra, paving stones, and india-rubber.

Exports.—Oil-cake, salt, india-rubber goods, potatoes, palm and other oils, patent fuel, cement, flour, and acids.

Accommodation.—There are three new tidal harbours designated Seehafen A, B, and C respectively. Their lengths are from 2,025 ft. to 3,160 ft.; breadth, 325 ft.; with a depth at high water of 24 ft. They were completed during the early part of 1907. Powerful modern electric cranes, electric light, warehouses, and all necessary appliances are installed for the quick handling of goods into trucks, warehouses, transshipment, etc. Extensive depôts for wood, nitrate, whisky, raw sugar, india-rubber, phosphate, etc. Several large steamers direct from the river Plate, and other places, have discharged in the new harbours, where they have received good dispatch, discharging as much as 600 tons and more per day.

The old harbour has also commodious docks, as under:—

Verkehrshafen.—Width (average), 590 ft.; length of lock, 128 ft.; width of lock, 55 ft.; depth on sill at high water ordinary springs, 17 ft. 3 in. Length of quayage, 2,130 ft. Depth at quayside, ordinary springs, high water 17 ft. 6 in., low water 12 ft. 6 in. Four hand cranes to lift 1½ tons each three steam cranes to lift 2 tons each; two transportable steam cranes to

Germany—Harburg (*continued*).

lift 3 tons each; one hand crane to lift 15 to 20 tons. At high water vessels of any length can pass the lock.

Hafenkanal.—Width (average), 200 ft. Entrance, 50 ft. Quayage length, 1,900 ft. Depth at entrance and quayside, ordinary springs, high water 16 ft. 3 in.; low water 11 ft. 3 in. Eight hydraulic cranes to lift $1\frac{1}{2}$ ton each, also some private hand cranes.

Oestlicher Bahnhofskanal.—Extreme width, 115 ft. Entrance, 50 ft. Length of quayage, 1,640 ft. Depth at entrance and quayside at ordinary springs, high water 14 ft. 9 in.; low water 9 ft. 9 in. Twelve hydraulic cranes to lift one ton each, also some private hand cranes.

Westlicher Bahnhofskanal.—Width (average), 100 ft. Entrance, $29\frac{1}{2}$ ft. Length of quayage, 1,085 ft. Depth at entrance and quayside, ordinary springs, high water $12\frac{1}{2}$ ft., low water $7\frac{1}{2}$ ft.

Kanalplatz.—Width (average), 260 ft. Length of quayage, 755 ft. Depth at entrance and quayside at ordinary springs, high water 14 ft., low water 9 ft. Two hand cranes to lift $1\frac{1}{2}$ to 2 tons each.

Kauffahrtskanal.—Width (extreme), 65 ft. Entrance, 26 ft. Length, of quayage, 1,215 ft. Depth at entrance and quayside at ordinary springs, high water 8 ft., low water 3 ft. Some private hand cranes.

Neue Quai.—Length of quayage, 1,640 ft. Depth at entrance and quayside at ordinary springs, high water 19 ft., low water 14 ft. Three steam cranes to lift $2\frac{1}{2}$ tons each.

Wiesenkanal.—Width (average), 200 ft. Entrance, 52 ft. Length of quayage, 1,345 ft. Depth at entrance and quayside ordinary springs, high water 19 ft., low water 14 ft.

Petroleumhafen.—Width (average), 490 ft. Length of lock, 123 ft. Width of lock, 29 ft. Depth on sill at high water ordinary springs, 14 ft. Length of quayage, 985 ft. Depth at quayside ordinary springs, high water 15 ft., low water 10 ft. At high water vessels of any length can pass the locks.

Westlicher Binnenkanal.—Width (average), 150 ft. Entrance, 50 ft. Length of quayage, 855 ft. Depth at entrance and quayside ordinary springs, high water 14 ft., low water 9 ft.

Winterhafen.—Width (average), 148 ft. Length of quayage, 1,050 ft. Depth at entrance and quayside ordinary springs, high water 16 ft., low water 11 ft.

The depth of water in the river is about 20–22 ft. on an average at high water, but is greatly dependent upon the winds, etc. It is hoped that negotiations now in progress for dredging the river to a depth the same as at Hamburg will soon be brought to a close. There is a common slipway to lift vessels up to 600 tons reg.

Pilotage.—Not compulsory. Inwards from Altona, 55 pf. per decimetre (about 1 mk. 65 pf. per foot). Outward, 40 pf. per decimetre. From Altona outwards, refer to Hamburg.

Port Charges.—Harbour dues, 4 pf. per cubic metre, discharging and loading. **Stevedoring:**—7*d.* to 10*d.* per ton, according to nature of cargo. **Ballast:**—About 1 mk. per ton, f.o.b. **Towage:**—Agreement for Lower Elbe. In harbour, up to 200 cubic metres, 2*s.*; 500, 6*s.*; 1,000, 10*s.*; 1,500, 15*s.*; and over 1,500, 20*s.* There are no light, tonnage, or quay dues, and cranage dues are paid by merchants. **Bunkers:**—Same

Germany—Harburg (continued).

price as obtainable at Hamburg. Navigation kept open during the winter months by powerful ice-breakers.

HOLTENAU.

Holtenau is situated in lat. $54^{\circ}23'$ N., long. $10^{\circ}5'$ E.

Population.—2,000.

Imports.—Wood and coal.

Exports.—Grain.

Accommodation.—There is a depth of water of 14 to 15 ft. alongside the quay (outside the canal sluices), and of 19 to 20 ft. alongside the coal yards (inside the sluices). Average tonnage of vessels using port about 19,000 d.w. tons.

Pilotage.—Not compulsory. For steamers and sailing ships, from sea to Holtenau, or vice versa, 5 mk. per metre draught from 1st October to 30th March, 4 mk. per metre from 1st April to September 30th.

Port Charges.—Harbour Dues:—Outside the sluices, 4 pf. per cubic metre in, 4 pf. out. Inside the sluices (coal yard), no harbour dues.

Clearance Fees:—For coals, 1d. per ton cargo; for other cargoes, 40 pf. per normal last ($1\frac{1}{2}$ reg. tons). **Ballast:**—90 pf. per ton. **Labour:**—Discharging coal, 15 mk. per keel.

Pro Forma Charges on a steamer of 700 register tons, cargo of 1,400 tons of coal in, and ballast out:—

	Mk.
No harbour dues.	118
Brokerage on 1,400 tons at 1d. per ton	990
Discharging 1,400 tons at 15 mk. per keel	10
Petty charges and sundries	

1,118 = £54 16s. 1d.

HUSUM.

Husum is in lat. $54^{\circ}27'$ N., long. $9^{\circ}4'$ E.

Population.—9,041.

Imports.—Coal, bran, cake, and other feeding stuffs, timber, and manufactured goods.

Exports.—Agricultural products.

Accommodation.—On the Middle Hever bar there is a depth of 16 ft. at low water, and 26 ft. at high water. The Hever is well buoyed, and two new lights—one at Westerheversand and another at Pellworm—enable ships to cross the bar at night and come up the Hever to Hever Steert buoy, where they can safely anchor. From the road (buoy S), where the ships find a good anchorage in 18 ft. at low water (28 ft. at high water), a channel (Aue) leads up to Husum. This channel is now being deepened to 16 ft. at high water, so that steamers up to 15 ft. draught can come up into the outer port and discharge at the new quay, where at low water they lie aground on soft mud. The inner port has only a depth of 10 to 11 ft. at high water. Two steam cranes have been put up on the new quay, enabling a discharge of 20 tons per hour by each crane. The depth of water at the new quay is 15 to 16 ft. at high tide. There are three railway lines along the quay, communicating with all parts of the province of

Germany—Husum (*continued*).

Schleswig-Holstein. There is a regular steamship service between Hull and Husum, also Husum-Hamburg, and other German ports. Average tonnage of vessels using the port, 600 to 800 tons.

Pilotage.—Not compulsory. Ships coming to Husum for the first time take a pilot at the inner Eider lightship. The pilot brings the ship up the Hever to Buoy S, whence the harbour pilot brings the ship up the channel into port. Going out, captains take only a harbour pilot, finding the way from buoy S to the sea alone.

Port Charges.—**Clearance Fees** :—£1 in, and £1 out, for steamers of 600 to 700 tons. **Consular Fees** :—Stamp, 2s. 6d. **Ballast** :—1s. 3d. per ton. **Labour** :—6d. per hour.

Pro Forma Charges on a steamer of 274 tons net register, cargo 600 tons of coal in, and ballast out, drawing 13 ft. loaded :—

	Mk.	pf.
Harbour dues at 5 pf. per net cubic metre	38	75
Brokerage, $\frac{1}{2}$ per cent. for collecting freight	15	00
Harbour pilotage, in and out	30	00
Clearing in and out	40	00
Discharging, 9d. per ton	450	00
Harbour dues, out	38	75
Other charges	20	00
	632	50 = £31 0s. 1d.

ITZEHOE.

Itzehoe, in lat. 53° 55' N., long 9° 31' E., is situated on the river Stör, a tributary of the Elbe, and is connected by rail with Glückstadt.

Population.—16,195.

Imports.—Wood from the Baltic, and coal.

Exports.—Cement, sugar, and general goods.

Accommodation.—Itzehoe is a tidal harbour, with a depth of from 13 to 14 ft., and is only suitable for small vessels. Vessels of from 500 to 600 tons often go up as far as Itzehoe, but the assistance of a tug boat is necessary. There are two bridges to pass on the way up.

Pilotage.—A pilot is to be had at the entrance of the Stör. **Towage** by agreement from £3 to £5.

Port Charges.—The dues and charges are the same as at Glückstadt.

THE KAISER WILHELM CANAL.

The Kaiser Wilhelm Canal connects the North Sea with the Baltic, starting at Brunsbüttel, on the river Elbe, and terminating at Holtenau, near Kiel.

Accommodation.—The length of the canal is 61 miles; depth below mean water level, 29½ ft.; average width at bottom, 72 ft.; width on bottom in curves, 124½ ft. Passing stations—width on bottom, 197 ft.; length, 1,500 ft. There are only two locks, one at Holtenau, generally open, the other at Brunsbüttel, open 3 to 4 hours each tide. There is electric light on both banks, which enables vessels to use the canal at night; the passage can be made in 8 to 10 hours. Vessels are allowed to pass

Germany—Kiel (*continued*).

Accommodation.—Kiel is the principal naval port of Germany. It has large and commodious quays, 4,875 ft. long, with a depth of water alongside of 18 to 21 ft. The fjord has a depth of water that can take the largest vessels, and is at all times easy of access, with safe anchorage. There are six Government dry docks, and five floating docks. There are also two large shipbuilding yards beside the Government yard. All kinds of stores and provisions to be had. Fire and candles allowed on board in the harbour. The Bay of Kiel, to the north of the town, is the entrance to the Kaiser-Wilhelm Canal between the Baltic and the North Sea.

Time Signals.—Chronometers can be checked here by black ball 11 ft. in diameter on roof of the Artillery Magazine, 112 ft. above sea, on Imperial Wharf. Drop 11 ft. Ball hoisted half way up 10 minutes and 10 seconds before signal. Signal is made at noon and 1 p.m. Mid-European time, corresponding to 11 a.m. and noon Greenwich mean time.

Greenwich mean time.	Local mean time.
23 00 00	11 40 39·2
24 00 00	0 40 39·2

Pilotage.—Voluntary. Summer, 5 mk. per metre; winter, 6 mk. per metre.

Port Charges.—Harbour dues:—Vessels up to 170 cubic metres loaded, 10 pf. per cubic metre inwards, and the same outwards; in ballast, 5 pf. each way; above 170 cubic metres loaded, 12 pf. per cubic metre inwards, and the same outwards; in ballast, 6 pf. each way. Yachts and vessels with passengers only are free. **Stevedore:**—Coal, 15 mk. per keel; grain, 40 to 45 pf. per ton. **Ballast:**—1 mk. per ton. **Water:**—2 mk. 50 pf. per ton.

Pro Forma Charges on a steamer of 1,156 tons reg., with 2,435 tons coal in, ballast out:—

	Mk.	pf.
Customs declaration	7	50
Harbour dues	590	84
Clearance 1d. per ton cargo	207	72
Pilotage inwards (summer)	32	75
Discharging	1,723	62
Pilotage outwards	21	75
Harbour pilotage	50	00
Telegrams and petties	15	00

2,649 18 = £129 17s. 3½d.

KÖNIGSBERG.

Königsberg is in lat. 54°42' N., long. 20°30' E.

Population.—223,770.

Imports.—Colonial produce, tea, herrings, iron ore, steel, tin and plates, wine, coal, salt, phosphate, etc.

Exports.—Wheat, rye, barley, peas, oats, tares, linseed, rapeseed, hemp, flax, linens, oil-cake, oil, bristles, refined sugar, bones, mats, feathers, furs, hides, skins, timber, flour, wood pulp, etc.

Accommodation.—The entrance to Königsberg from the sea is by Pillau. From here there is a channel 22 miles long to Königsberg with a depth of 6 metres (19 ft. 8 in.). Besides the import and export trade, a very large transit forwarding trade to and from all parts of Russia and Poland.

Germany—Königsberg (*continued*).

is carried on. There are two slips, one 190 ft. long and the other 98.5 ft. long; the first has a lifting power of 650 tons. The harbour has 10,000 ft. quayage, with a depth alongside of 16 ft. There are three cranes to lift 7½, 8, and 25 tons respectively. It is not necessary for ships going to Königsberg to make a declaration of cargo at Pillau; masters are only required to deliver the bills of lading of the cargo at the Custom House at Pillau, and can then proceed to Königsberg to clear there. There is a small fee for reporting at Pillau.

Pilotage:—From and to Pillau, Königsberg, or vice versa:—

		Mk.	pf.
Ships of	200 cubic metres	10	00
	200 to 250 cubic metres.	12	00
"	250 " 300	15	00
"	300 " 350	17	50
"	350 " 400	20	00
"	400 " 450	22	50
"	450 " 500	24	00
"	500 " 600	25	50
"	600 " 700	27	00
"	700 " 800	28	50
"	800 " 900	30	00
"	900 " 1,000	31	50
"	1,000 " 1,300	33	00
"	1,300 " 1,600	34	50
"	1,600 and upwards	36	00

Vessels under 9 ft. draught are not bound to take a pilot; masters of regular steam traders may act as pilots of their own vessels, after passing an examination at Pillau. There is no charge made for the pilotage from sea to Pillau. Shipmasters on coming ashore are conducted by the sea pilot to the pilot office, where they receive a printed copy of the port rules.

Canal Dues.—Steamers and sailing vessels up to 800 cubic metres, German measurement, pay 1 pf. per cubic metre inwards and outwards each way.

From		801 to 1,000 cubic metres.		2 pf. per cubic metre.	
"	1,001	"	1,200	"	3
"	1,201	"	1,400	"	4
"	1,401	"	1,600	"	5
"	1,601	"	1,800	"	6
"	1,801	"	2,000	"	7
"	2,001	"	2,200	"	8
"	2,201	"	2,400	"	9
"	2,401	"	2,600	"	10

For every 200 cubic metres more the tax increases 1 pf. per cubic metre, with a maximum of 12 pf. per cubic metre, if with cargo; 7 pf. if in ballast. Ships paying ice-breaker dues pay half canal dues only. Tugboat extra if required.

Port Charges.—Harbour Dues:—Inwards and outwards each way if with cargo, 10 pf.; if in ballast, 5 pf. per cubic metre. On steamers and sea lighters 20 per cent. additional dues are levied. Vessels of less than 200 cubic metres pay half, and likewise vessels with coals, salt, cement, bricks, stones, sulphur, and phosphate, with liberty to be loaded within ¼ of their capacity with other goods. Vessels with less cargo than ¼ of their capacity pay dues at the same rates as ballast ships. Vessels coming from another Prussian port, within the limits of Memel and Stralsund besides German Rhine ports, are free of inward harbour dues.

Town Dues at the rate of 3 pf. per cubic metre are levied on vessels of

Germany—Königsberg (continued).

more than 200 cubic metres, and $1\frac{1}{2}$ pf. per cubic metre on vessels of less measurement for every entrance and sailing. Vessels of more than 200 cubic metres measurement coming from German ports, including Rhine ports, without calling at a foreign port, are free of town dues. Vessels which visit in the course of one year (April 1–March 31) the harbour of Königsberg at least ten times and have paid town dues get one-third refunded at the end of the year. **Clearance:**—In and out, per cubic metre, 6 pf. if with cargo; if in ballast half this rate. The charges for clearing in and out are the same by all firms. Steam dues, boom money, and river charges are no longer levied, but are included in harbour dues. Custom House documents, in and out, passes, entries, cockets, and bonds, in and out, together, for large ships, 6 mk.; for smaller vessels, somewhat less. During the winter season 5 pf. per cubic metre is charged for the ice-breakers, inwards and outwards, each way. Moving ships in the harbour, 3 to 7 mks. 50 pf. with cargo. **Ballast:**—Free, only the expense of taking on board. According to agreement of brokers with the Baltic White Sea Conference, the inward clearance of coal steamers is done at one penny per ton cargo up to 1,250 tons; one halfpenny for the outside quantity; no charge is made for outward clearance, clearing in ballast.

Pro Forma Charges on a steamer of 2,000 cubic metres, carrying 1,500 tons cargo coming with coal to Königsberg, and leaving with grain:—

	Mk.	pf.
Inward—		
Pilotage, Pillau to Königsberg	36	00
Stream dues, Königsberg harbour, for shifting	10	00
Two boats for assistance	12	00
Inward harbour dues, 6 pf. per cubic metre	120	00
„ clearance, 7 pf. per cubic metre	140	00
Sea canal dues, inward	140	00
Discharging coal, 1,500 tons, and stages at 70–80 pf. per ton (about)	1,100	00
Declaration	3	00
Gratuities	6	00
Petty charges, Königsberg and Pillau	15	00
Expedition fee, 442 lasts at 5 pf. per last	22	10
Town dues at 3 pf. per cubic metre	60	00
	1,664	10
Outward—		
Trimming grain, 1,500 tons at 22 pf. per ton	330	00
Outward harbour dues, 12 pf. per cubic metre	240	00
Sea canal dues outwards	140	00
Pilotage, Königsberg to Pillau	36	00
Stream dues for shifting in the harbour and out of the harbour	10	00
Outward clearance, 7 pf. per cubic metre	140	00
Two boats for assistance	12	00
Declaration	3	00
Petty charges, Königsberg and Pillau	15	00
Telegram and postages	15	00
Town dues at 3 pf. per cubic metre	60	00
	2,665	10 = £130 12s. 11d.

LEER.

Leer, in lat. $53^{\circ}15' N.$, long $7^{\circ}26' E.$, is on the Leda, near its junction with the Ems, 13 miles from Emden.

Population.—12,347.

Germany—Leer (*continued*).

Imports and Exports.—Same as Emden.

Accommodation.—At ordinary springs there is sufficient depth for vessels drawing 17 ft. There is a wet dock, 960 ft. long by 240 ft. broad having an entrance 50 ft. wide and $16\frac{1}{4}$ ft. deep at high water. There is also a quay 2,080 ft. long in connection with the railway, having eight cranes with lifting power from $\frac{1}{2}$ to 16 tons.

Pilotage.—Not compulsory. The pilotage is the same as at Emden, with additional pilotage from Emden roads up the river.

Port Charges.—The dues and charges are the same as at Emden.

Port Dues:—2 pf. per cubic metre. **Tonnage Dues:**—4 pf. per 1,000 kilos. **Loading or Discharging:**—30 to 40 pf. per hour. **Ballast:**—2 mk. per ton.

LÜBECK.

Lübeck, in lat. $53^{\circ}51' N.$, long. $10^{\circ}40' E.$, is situated on the river Trave.

Population.—91,541.

Imports.—Wood, grain, coal, pitch, fish, hides, iron and ironware, granite, manufactured goods, etc.

Exports.—Machinery, chemicals, salt, sugar, potatoes, etc.

Accommodation.—Steamers can enter the harbour at Travemünde with a draught of 7.5 metres (24 ft. 8 in.) from Travemünde to the railway bridges at Lübeck Town; the depth of water is 7 metres (23 ft.) Above the railway bridges the depth is 6 metres. Steamers passing the swing bridge are allowed to have a draught of 6.5 metres maximum. Between the swing bridge and the Holstein bridge the depth is 5.35 metres. The width of the opened swing bridge is $12\frac{1}{2}$ metres. Vessels with not more than 11 metres beam can pass the swing bridge. South-west winds will sometimes reduce the depth as much as 2 ft. or more, and north-east winds increase it about the same. In the first case vessels drawing too much water will have to discharge in lighters or wait for an increase of water, which in the fall of the year sometimes keeps two or three days below the mean depth, as long as the south-west gales last. A shift of wind to the north-west immediately causes an increase of the water. Lübeck has very commodious quays for loading and discharging. The harbour has a length of 2.1 km., or $1\frac{3}{4}$ miles. Vessels arriving from over-sea ports clear at Travemünde. The officers come on board and seal the hatches, etc., of sailing vessels; with steamers a guard is left on board, who leaves the ship at Lübeck, when a Custom House watchman comes on board. There is a large iron shipbuilding yard, having a large floating dock in two compartments, and a floating steam crane that can lift 40 tons. 650 yards above the entrance the harbour divides into two arms, which are called the inner and the outer harbour. At the entrance of the latter is a shipbuilding yard where repairs to ships' hulls and engines can be effected. Half-way between Travemünde and Lübeck, at Herrenwyk, there are large ironworks. At Herrenwyk there is a depth of water of 7 metres.

Pilotage must be paid coming in as well as going out, and is compulsory.

Germany—Lübeck (*continued*).**I. FOR SEA PILOT SERVICE.****A.—For steamships, coming in and going out:—**

	Mk.	pf.
(a) If the services of a pilot are required—		
1. For ships below or up to 100 cubic metre net measurements	2	00
2. For ships of 101 to 200 cubic metres	4	00
3. For ships of 201 to 2,000 cubic metres per cubic metre	0	03
4. For ships of more than 2,000 cubic metres additional for each cubic metre from 2,001 to 2,500 cubic metres	0	02
Over 2,500 cubic metres	0	01
(b) If the services of a pilot are not required and the net measurement amounts to over 200 cubic metres, per cubic metre	0	01

B.—For sailing vessels, sea lighters and boats, when the services of a pilot are required:—

	Mk.	pf.
1. With net measurement up to 50 cubic metres	1	00
2. „ „ „ over 50 to 100 cubic metres	2	00
3. „ „ „ of 101 to 200 cubic metres	4	00
4. „ „ „ of 201 to 2,000 cubic metres per cubic metre	0	03
5. With net measurement exceeding 2,000 cubic metres additional for each cubic metre from 2,001 to 2,500	0	02
Over 2,500 cubic metres	0	01

C.—For steamships, sailing vessels, and sea lighters putting into port at Travemünde on account of adverse winds, for getting sailing orders, on account of sea damage, for completion of provisions and coaling, on account of ice or in consequence of other causes of distress, which after their departure return there and leave again soon, half of the foregoing charges contained in A and B.

The pilot is entitled to free board during his stay on the ship, and to 3 mk. for every night he is obliged to remain on the boat.

II. FOR RIVER PILOTAGE.**A.—For steamships, sailing ships, sea lighters:—**

	Mk.	pf.
(a) If the services of a pilot are required—		
1. With net measurement up to 300 cubic metres	6	00
2. „ „ „ over 300 cubic metres per cubic metre	0	02
(b) If the services of a pilot are not required, with net measurement of over 200 cubic metres per cubic metre	0	01

The pilot is entitled to free board during his stay on the boat, and 3 mk. for every night which he might have to remain on the ship.

Each vessel using a pilot must pay a fee of 1 mk. 50 pf. for the journey from Lübeck to Travemünde, or vice versa.

If the departure of the vessel is delayed over the time for which a pilot has been engaged, 50 pf. must be paid to him for every full hour in which the pilot is obliged to wait, from the time for which he was engaged.

Tugboats or motor boats with sea lighters in tow are exempt from pilotage, if they have no cargo on board.

III. FOR THE PILOT SERVICE IN THE PORT OF LÜBECK.

A.—Vessels calling for the services of a pilot on towing in the harbour pay 3 mk.

B.—Vessels using the services of a pilot for—

(a) Securing the tows when landing in Travemünde	3	mk.
(b) For bringing the ship's papers to the Travemünde roads	6	„

Vessels whose net measurement does not exceed 200 cubic metres are exempt from pilotage dues.

Germany—Lübeck (*continued*).

Port Charges.—Harbour Dues to be paid both on entering and going out :—

1. For steamships exceeding 200 cubic metres—

(a) If loaded	15 pf.
(b) If empty or in ballast	5 „

2. For sailing vessels exceeding 200 cubic metres—

(a) If loaded	12½ pf.
(b) If empty or in ballast	4 „

3. For ships over 100 up to 200 cubic metres inclusive—

(a) If loaded	8 pf.
(b) If empty or in ballast	4 „

4. For ships up to 100 cubic metres inclusive—

(a) If loaded	6 pf.
(b) If empty or in ballast	3 „

Vessels coming in or going out are considered to be empty or in ballast—

1. If loaded only to a fourth part of their loading capacity.

2. Loaded with bulk goods.

The following are recognized as bulk goods :—

Soda, potash, kainit, gravel, salt refuse, worked and unworked stones, coal and coke (if for iron ore reduction works), lignite and lignite briquettes, lime stones, cement, cement-pipes, bricks of every description, phosphate, gypsum, loam, clay, earths of every description, sand, quartz, quartz-sand, glass-sand, crude sulphur, fluor-spar, feldspar, heavy spar, limespar, chalks of every description, ore of every description, pyrites, pyrite products, slacks of every description, manure of every description, potatoes, sugar, corn and pulse, celluloid, and wood if loaded in sailing boats of 600 cubic metres net measurement.

The following are exempt from harbour dues :—

1. Vessels which have come in and gone out twice in one calendar month, and have paid the port dues for these voyages, are exempt for every ensuing voyage during the same month, and that for the inward as well as for the outward journey.

2. Open flat boats, boats loaded as lighters and fishing boats.

3. Vessels going into another port for repairs or reconstruction, empty or in ballast, returning empty or in ballast immediately after repairs or reconstruction.

Vessels coming in for repairs or reconstruction, empty or in ballast, and leaving after repairs or reconstruction, empty or in ballast.

Vessels newly constructed in the State of Lübeck, leaving immediately after completion empty or in ballast, for this journey.

4. Vessels only coming into port at Travemünde on account of adverse winds, to apply for sailing orders, on account of damage at sea, for completion of provisions or coaling, through ice or through any other cause of distress.

Vessels having put into port at Travemünde on account of sea damage are also exempt from port duty, if they are obliged to go up to Lübeck for repairs.

5. In the traffic of those vessels coming in loaded and which either take in a further cargo or discharge or partly discharge and load part of the cargo, the dues will be calculated according to the regulations for ships

Germany—Lübeck (continued).

n ballast, if the discharged or loaded goods do not exceed a fourth part of the net measurement.

All vessels coming in from sea or going out to sea from Lübeck or Travemünde, as well as those loading and discharging in the Travemünde roads, are subject to the above dues.

Water :—For every vessel over 150 cubic metres, 1 mk. 20 pf. For every steamship, from 150 to 300 cubic metres, 60 pf. **Ballast** must be ordered and paid at the harbour-master's office, and costs 1 mk. per cubic metre from the Government's ballast bridge into the hold of the ship. Vessels laid up in the harbour of Lübeck for wintering pay 6 pf. per cubic metre for the first month, and for every succeeding month 2 pf. per cubic metre.

Steam-tug Charges :—

A. SEA-GOING SHIPS.

1. From Travemünde to the sea or from the sea to Travemünde—

- (a) From Travemünde to the roads or from the roads to Travemünde, 4 pf. per cubic metre (from Travemünde to the roads by uninterrupted onward journey from Lübeck free)
- (b) From Travemünde to Klein-Klütz or from Klein-Klütz to Travemünde, 6 pf. per cubic metre.
- (c) From Travemünde onward to sea or vice versa, by special agreement.

2. From Travemünde to Lübeck, 10 pf. per cubic metre.

3. From Lübeck to Travemünde, 8 pf. per cubic metre.

4. Vessels which are picked up by the tugboats on the river between Travemünde and Lübeck must pay the full dues.

5. Salvage and assistance by special agreement.

6. Assistance for towing into port, including the distance to the ballast landing stage on the Teerhof Island.

(a) Steam ships up to 500 cubic metres	Mk.
.. .. .	6
.. .. . over 500 to 800 cubic metres	7
.. .. . 800 1,200	8
.. .. . 1,200 1,500	9
.. .. . 1,500 for every further 200 cubic metres, or	1
portion thereof, extra	

When vessels which have had the assistance of steam-tugs are towed back the same day to the same place, the fee for returning is reduced to one-half of the preceding amounts.

(b) Sailing vessels to 100 cubic metres	Mk.
.. .. .	2
.. .. . over 100 cubic metres to 200 cubic metres	3
.. .. . 200 400	4
.. .. . 400 600	5
.. .. . 600 for every further 200 cubic metres or portion	1
thereof, extra	

(c) For towage under the Eutiner Railway Bridge an additional charge of 50 per cent. on the preceding amount under 6 (a) and (b) is made.

7. Attendance of a steamboat, whether by day or by night, from Travemünde to Lübeck, or vice versa—

To 1,500 cubic metres	Mk.
.. .. .	60
To 2,000	80
Over 2,000	100

From Schlutup to sea, or vice versa—

To 1,500 cubic metres	Mk.
.. .. .	40
To 2,000	50
Over 2,000	60

Germany—Lübeck (*continued*).

No charge is made for the use of the electric search light. Sea-going steamers must be worked by their own engines.

8. In every case where a second steam-tug is asked for, two-thirds of the charge must be paid for it.

9. The minimum charge for each towing journey on the river amounts to 25 mk.

During the winter, when the river has to be kept open by the ice-breaker, every vessel has to pay, for every cubic metre net measurement, 12 pf. coming in, and 6 pf. going out.

Pro Forma Charges on a steamer of 1,342 tons register, or 3,799 cubic metres, with a cargo of coal inwards from Newcastle-on-Tyne, leaving in ballast:—

	Mk.	pf.
Stamp duty	10	00
Harbour dues	759	80
Water-work contribution	1	20
Pilotage in and out	320	94
Petty expenses	6	00
Clearing in and out	172	37
Custom House dues for 5½ days at 60 pf. per hour, and 1 mk. 60 pf. per hour overtime	95	90
Discharging the cargo at 85 pf. per ton	2,370	82
	3,737	03 = £183 3s. 10d.

MELDORF.

Meldorf, in lat. 54°6' N., long. 9°5' E., is about 52 miles N.W. of Hamburg, on the river Meile.

Population.—About 4,000.

Accommodation.—The harbour is rather difficult of access, and has 9 to 10 ft. of water.

The charges on a vessel of 50 reg. tons were: Harbour dues 8s., and pilotage 6s. 2d.

MEMEL.

Memel is in lat. 55°43' N., long. 21°9' E., at the northern extremity of the Kurisches Haff, near its opening into the Baltic.

Population.—20,685.

Imports.—Colonial produce, salt, herrings, dye-woods, tobacco, coal, guano, phosphates, etc.

Exports.—Corn, wood, wood pulp, hemp, amber, flax, bristles, nails, hides, linseed, wax, pitch, and tar.

Accommodation.—The harbour has an average depth of 19 ft., with 20½ ft. of water on the bar. The length of quayage at the entrance is 950 ft., and there is 1,725 ft. of quayage inside. There is a jetty 426 ft. long, with a depth of 19 ft., and for about a mile on both sides of a creek running through the town there is loading space with a depth of 14 to 15 ft. There is a crane to lift 12½ tons. Building of large sailing vessels is carried on, and steamers to 50 tons are also built. The Government have a slip 164 ft. long, and there is a private one 150 ft. long to take vessels up to 500 tons. Any repairs to hull or machinery can be effected in the shortest time.

Germany—Memel (continued).

Pilotage.—A pilot cutter cruises before the harbour, and as long as vessels at sea can be boarded by pilots, a yellow flag will be shown from the top of the main lighthouse. If this flag is not hoisted, vessels can only enter (wind, weather, and draught permitting) by the help of the signal beacon, to which particular attention must be paid. **Beacons and the Depth of Water:**—Masters of vessels should pay special attention to the following signals, viz., if the signal beacon and the middle beacon are both lowered, no sailing vessel is allowed to enter unless being in the greatest danger, but must try to clear the coast; or, if this is impossible, must anchor. If the balloon on the main lighthouse is hoisted, *no vessel is allowed to enter under any circumstances whatever.* The red flag from the signal beacon, by which vessels are signalled into the harbour in cases when they have no pilot on board, is also a sign that the depth of water on the bar is 6 metres (19 ft. 6 in.). More or less water is signalled if considered advisable from the middle beacon in the following manner, viz., every balloon hoisted on the south side of it indicates 0·3 metres less, and every balloon on the north side 0·3 more than 6 metres depth of water on the bar. The following signals on the lighthouse mean: A red balloon—it is impossible to enter the harbour, keep off. One flag—the pilots will be attending. No flag—the pilots cannot come out. If necessary to enter, watch the signals made from the guiding beacon, and follow the directions shown. Vessels wishing the assistance of a steam-tug should approach the red outer buoy as closely as possible, and hoist two flags, one above the other. Masters of ships entering without a pilot are recommended to set as much sail as their vessels can bear, as the current runs out very strongly.

Port Charges.—Towage:—As per agreement. **Port Dues:**—In ballast, 5 pf., loaded 10 pf. per ton coming in, and going out the same. **Stevedore:**—Discharging coal, 6 mk. per keel. **Ballast:**—8 pf. per cubic metre. **Brokerage for Clearance:**—Coming in with ballast, going out with sleepers or deals, 10 pf. per cubic metre. Coming in with ballast, going out with grain, 12 pf. per cubic metre. Coming in with cargo, going out with sleepers or deals, 15 pf. per cubic metre. Coming in with cargo, going out with grain, 17 pf. per cubic metre. Coming in with coal, as per agreement with the Baltic and White Sea Conference, up to 1,250 tons cargo, 1d. per ton; above 1,250 tons cargo, $\frac{1}{2}$ d. per ton. During the winter season an additional 12½ per cent. on the harbour dues will be charged for the ice-breakers, in and out.

Pro Forma Charges on a sailing vessel of 140 tons (397 cubic metres), with cargo in and out:—

	Mk.	pf.
King's Port charges, with cargo in and out, at 15 pf. per cubic metre	59	55
Bridge tolls	5	00
Brokerage, 15 pf. per cubic metre	59	55
Boat assisting the ship over the bar	7	00
Petty expenses, seal money, declarations, and Custom House boats	2	50
River pilotage	10	00
	143	60 = £7 Os. 9d.

Pro Forma Charges on a steamer of 734 tons register, or 2,080 cubic metres, coming in with water ballast, going out with sleepers:—

Germany—Memel (*continued*).

	Mk.	pf.
King's Port charges, coming in at 6 pf. per cubic metre		
" " " going out, at 12 pf. per cubic metre	374	40
Brokerage at 10 pf. per cubic metre, for clearance	208	00
Boat assisting the ship over the bar	20	00
Clearance, office expenses, and stamps	2	59
River pilotage	12	00
Postages	2	50
Telegraphic messages	5	00
Winter harbour dues	46	80
Support to the poor	1	00
Stowage as per agreement, 1,500 loads at 70 pf. per load.	1,050	00
Address commission to the shipper of the cargo, 12 pf. per cubic metre	249	60

1,971 89 = £96 13s. 4d.
NEUHAUS.

Neuhaus, in lat. 53°49' N., long. 9°1' E., is situated on the river Oste which enters the river Elbe at its mouth.

Population.—2,000.

Imports.—Coal, wood, etc.

Exports.—Cement, bricks, and tiles.

Accommodation.—Vessels of 10 ft. draught can enter the harbour and those drawing 15 ft. can load in the river Oste. With spring tides vessels of 15 ft. draught can enter the harbour. The Oste is difficult of entrance with southerly winds, and the best wind to proceed to Neuhaus from the river is from the N.W. to N.E.

Pilotage.—Not compulsory. Must be agreed with pilot; as a rule 2s. per ft.

Port Charges.—**Harbour Dues**, inward or outward, cargo, 10 pf. per cubic metre. No river dues. **Ballast**:—sand in harbour, 2s. per ton; clay ditto free, if taken from the banks of the Oste. **Labour**:—3s. 6d. to 4s. per day.

NEUMUHLN.

Neumuhlen is opposite Kiel, on a creek with about 13 ft. of water. Pilotage not compulsory; in summer, 5 mk. per metre; in winter, 6 mk. 50 pf. per metre. No harbour dues.

NORDEN.

Norden is in lat. 53°35' N., and long. 7°12' E.

Population.—6,717.

Accommodation.—Vessels of 7 ft. draught can enter the harbour, and those drawing 9 ft. can load in the outer roads by means of lighters. The canal between Norden and the Ley Bay is 5 miles long. It is available for vessels 70 to 80 ft. long, drawing 8 ft., and of 24 ft. beam. Depth of water at entrance and at quayside at high water springs, 8 ft.; neaps, 7 ft. There is one crane. Pilots can always be obtained near the entrance to the Ems. There is a common slip 115 ft. long, 7 ft. at ordinary springs high water.

Port Charges on a vessel of 100 tons register: Cargo in and out, 15s.; lighterage, loading from 7 to 9 ft. draught in the outer roads, £2.

Germany.

NORDENHAM.

Nordenham, in lat. $53^{\circ}29' N.$, long. $8^{\circ}26' E.$, is on the left bank of the Weser, 6 miles above Bremerhaven.

Population.—3,381.

Imports.—Grain, wool, petroleum, coal, nitrate of soda, etc.

Exports.—Coal, coke, and kainit.

Accommodation.—Vessels can anchor in the stream in 6 fathoms at low water. There are two jetties built into the river Weser, 3,117 ft. and 90 ft. in length. These constitute the total length of quayage, and have a depth of water at high tide, 34 ft.; low tide, 23 ft. There is also a tidal fishing harbour for trawlers with 1,312 ft. quayage; the width at entrance is 31 ft. and the depth at ordinary low water, $16\frac{1}{2}$ ft., where steamers can coal, the railway coming alongside. Electric cranes lifting $1\frac{1}{2}$ –3 tons. English and German coals for steamers at current rates are always to be had.

Pilotage.—From Nordenham to Bremerhaven: April 16, to September 15, 3 mk. 90 pf. per metre. September 16 to April 15, 5 mk. 20 pf. per metre.

From Bremerhaven to Nordenham: April 16 to September 15, 5 mk. 90 pf. per metre; February 16 to April 15, 7 mk. per metre; September 16 to November 15, 7 mk. per metre; November 16 to February 15, 5 mk. 20 pf. per metre.

Port Charges.—Towage as per agreement. **Tonnage and Port Dues:**—3 pf. per cubic metre for fifteen days for sailing vessels, and 4 pf. for steamers. **Shipbroker:**—£5 5s. **Stevedore:**—Discharging coal, 6d. per ton. **Sand Ballast:**—1s. 6d. to 2s. per ton f.o.b.

NORDERNEY ISLAND.

Norderney Island is in lat. $53^{\circ}43' N.$, long. $7^{\circ}12' E.$

Population.—3,888.

Imports.—Building materials, coal, and groceries.

Exports.—Coke, coal-tar products, etc.

Accommodation.—The harbour offers a safe anchorage in all weathers. The difference between average high and low spring tides is 9 ft., that at low water there is a depth of 11 ft. in the harbour. The terminus of the railway is at Norddeich, $4\frac{1}{2}$ miles distant. In the winter there are two, and in the summer fourteen, daily communications with this place by ferry steamer.

Pilotage.—Not compulsory.

Port Charges.—Entrance Fees:—May to November, for steamers to 200 cubic metres net measurement, 3 pf. per cubic metre; over 200 cubic metres, 6 pf. per cubic metre. For ships leaving the harbour, up to 200 cubic metres, 6 pf. per cubic metre; over 200 cubic metres, 12 pf. per cubic metre. November to April; for steamers up to 200 cubic metres, 6 pf. per cubic metre; over 200 cubic metres, 3 pf. per cubic metre. For ships leaving the harbour up to 200 cubic metres, 2 pf. per cubic metre; over 200 cubic metres, 6 pf. per cubic metre. **Fresh Water:**—1 mk. 20 pf. per cubic metre.

Germany.

OLDENBURG.

Oldenburg is situated in lat. $53^{\circ}10'$ N., long. $8^{\circ}13'$ E.

Population.—Town and suburbs, 28,565.

Imports.—Wood, grain, coal, sugar, and flour.

Exports.—Moss litter and bottles.

Accommodation.—The harbour of Oldenburg is a tidal harbour, with a depth at low water of 10 ft., and at high water of 16 ft. The harbour is connected with the railway, and has a wharf 1,000 ft. long, on which vessels discharge their cargo. Vessels with a draught of 12 ft. can reach the harbour with every tide.

Pilotage.—Compulsory from Elsfleth to Oldenburg. For steamers and sailing ships, 6 mk. per metre.

Port Charges.—**Harbour Dues** :—5 pf. per cubic metre. **Light Dues** :—10 pf. per cubic metre. **Ballast** :—2 mk. 10 pf. per ton. **Labour** :—40 pf. per hour for merchandise, 60 pf. per hour for coal. **Brokerage** :—5 per cent. Collecting freight, $\frac{1}{4}$ per cent. **Water** :—30 pf. per cubic metre.

Pro Forma Charges on a vessel of 600 tons d.w.:—

	Mk.	pf.
Light dues	91	30
Harbour dues	25	55
Pilotage, Elsfleth to Oldenburg	24	00
“ Oldenburg to Elsfleth	18	00
Clearance	42	60
Charter party	4	50
Brokerage in, at $1\frac{1}{2}$ per cent. 3,029 mk. 40 pf.	50	50
“ out, at $2\frac{1}{2}$ per cent. 1,400 mk.	35	00
Encashing freight, at $\frac{1}{2}$ per cent. 3,029 mk. 40 pf.	15	15
Entry, petty expenses	1	50
Telegrams, telephone, postage	6	75
Discharging, 594 tons coal at 60 pf.	356	40
Loading, 200 tons moss litter at 75 pf.	150	00

821 25 = £40 5s. 1d.

PAPENBURG.

Papenburg, in lat. $53^{\circ}5'$ N., long. $7^{\circ}22'$ E., is about 20 miles from Emden Road.

Population.—7,675.

Imports.—Slates, and timber.

Exports.—Timber, coal, and coke.

Accommodation.—Papenburg can be reached by vessels drawing 13 ft.; deeper vessels must lighten to this draught at Leerort, about 9 miles distant, where there is 18 ft. of water.

The canal from Papenburg locks to the town is available for vessels 295 ft. long, drawing 18 ft., and 49 ft. beam. The waterway from Leerort to Papenburg is being deepened from 13 to 18 ft. The canal between the lock and the town is $1\frac{1}{2}$ miles in length; the length of the lock is 295 ft.; width at entrance, 49 ft.; depth of water over sill, 18 ft. The length of the basin is 1,246 ft.; its width, 196 ft. The depth alongside the quay is 11 ft. The cranes are up to 25 tons.

Pilotage.—For sea vessels drawing 35 to 36 decimetres, 102 mk.; for every additional decimetre up to 40 decimetres, 9 mk.; thence up to

Germany—Papenburg (continued).

0 decimetres, 10 mk. ; 51 to 52 decimetres, 270 mk. From October 1 to March 31, one-half extra. Pilotage out for empty, ballast-loaded vessels, or vessels laden with coal or coke, half the rates.

Port Charges.—Towage from Delfzyl Roads, 61 pf. : from Knock Point, 56 pf. ; from Emden Roads, 51 pf. ; from Leerort, 36 pf. per ton register. For towage up and down (vessels loaded in and loaded out), 20 per cent. allowed off ; 40 per cent. allowed off outward towage of vessels in ballast. Large steamers towed from Leerort to Papenburg and back for 100 to 180 marks, according to size. Discharging of steamers excellent. Bunker coal at current rates.

Pro Forma Charges on (1) An English steamship, gross 1,074 tons register, from Sundsvall with timber, leaving empty for Grangemouth. (2) A Dutch schooner, gross 170 tons register, from Fredrikstad with timber, leaving with coke for Gefle :—

	(1) Mk. pf.	(2) Mk. pf.
Pilotage in, 16½ feet	240 00	92 00
„ out, 9½ feet	36 50	19 50
Mooring	20 00	—
Custom House dues	125 00	24 00
Harbour dues, 9 pf. per cubic metre (7 pf. in and 2 pf. out)	273 87	—
Harbour dues, 10 pf. per cubic metre (7 pf. in and 3 pf. out)	—	48 10
Clearance, in and out	161 10	34 00
Boat hire	72 00	—
Brokerage, 1½ per cent. inward	204 40	44 10
„ 2 per cent. outward	—	36 00
Encashing freight, ½ per cent.	81 76	5 61
Cost of discharging 700 stds. (225 at Leerort), 1 mk. 75 pf.	1,225 00	—
Lighterage, 3 mk. per std. for 225	675 00	—
Towage in and out	—	172 00
Custom House declaration	10 00	4 50
Charter and stamp	6 50	6 50
Towage up to the town	—	15 00
Telegrams, postages, etc.	28 40	4 20
	3,159·53	505·51
	=£154 17s. 8d.	=£24 15s. 7d.

PILLAU.

Pillau, in lat. 54°39' N., long. 19°55' E., is situated at the entrance to the Frisches Haff, and is the entrance from the sea to Königsberg, Brandenburg, Braunsberg, Frauenburg, Tolckemit, Elbing, and Fischhausen.

Population.—7,377.

Accommodation.—The depth of water on the Pillau bar is about 7 metres. The depth of water in the canal from Pillau to Königsberg is from 6 to 6½ metres, and ½ metre more during W. winds. There is good anchorage outside the breakwater in 7 fathoms of water, and between the breakwater and entrance to the harbour in 5 fathoms. Pillau is never closed by ice except in very extreme cases. During the winter, ice-breakers keep the harbour and the Königsberg Sea Canal free of ice. There is a floating dock which can take vessels of 800 tons. There are four quays :— Pillau Harbour Railway Quay : length, 51,400 ft. ; available for vessels drawing 21½ ft. Town Quay : length, 2,310 ft. ; available for vessels drawing 21½ ft. Petroleum Quay : length, 1,500 ft. ; available for vessels

Germany—Pillau (*continued*).

drawing 21½ ft. Ballast Quay: length, 460 ft.; available for vessels drawing 23 ft.

There is a crane to lift 20 tons on the Railway Quay.

Port Charges.—With cargo in or out, 10 pf. per cubic metre, in ballast, in or out, 5 pf. per cubic metre. Vessels with coal, salt, cement, bricks, tiles, slates, and other stones, 5 pf. per cubic metre. Vessels coming from another Prussian port within the limits of Memel to Stralsund, and also vessels coming from the Prussian Rhine ports, where they have discharged cargo, are free from inward harbour dues. Vessels loading or discharging part cargoes pay only the ballast dues, if such part cargo does not exceed $\frac{1}{4}$ of their net capacity. The same is the case if vessels have loaded or discharged cargoes consisting of $\frac{1}{2}\%$ of their net capacity of ballast goods, or $\frac{1}{20}$ or less of full taxed cargo.

RENDSBURG.

Rendsburg, in lat. 54°17' W., long. 9°40' E., is situated on the Kaiser Wilhelm Canal and the river Eider.

Population.—15,577.

Accommodation.—There is 18 ft. of water from the Canal to the quay of the town, where coal, pig iron, grain, timber, quebracho, etc., are discharged. At the quay of the Chemische Düngerfabrik (manure works) there is 20 ft. of water; at Audorf (steel works) 17 ft.; and at Rade (coke works) 19 ft. The harbour is connected by a lock with the river Eider, but this river is only navigable for vessels drawing 11 ft.

Pilotage.—From canal to the town, if any, 10 mk. to 30 mk.

Port Charges.—**Canal Dues** to Rendsburg, coming or going with cargo, via Brunsbüttel, 33 pf. per register ton, ballast 20 per cent. less; coming or going via Holtenau, 27 pf. per reg. ton, ballast 20 per cent. less.

Pro Forma Charges on a steamer of 1,399 tons register, coming from river Plate with 3,370 tons of quebracho, and going in ballast to Cardiff:—

	Mk.	pf.
Canal dues, inward	593	00
" " outward	480	00
Helmsmen, in and out	60	00
Pilotage, in and out	50	00
Tugboat	75	00
Harbour dues	396	00
Custom House dues	211	80
Discharge, 1 mk. per ton (including weighing and hire of scales and insurance)	3,370	00
Agency, £10 10s.	214	20

5,450 00 = £267 3s. 3d.

ROSTOCK.

Rostock, in lat. 54°6' N., long. 12°9' E., is the largest town in Mecklenburg-Schwerin, and is distant 7 miles from Warnemünde.

Population.—60,793.

Imports.—Coal, salt, iron, limestone, herrings, provisions, petroleum, timber, chalk, and colonial produce.

Exports.—Wheat, barley, rye, oats, and beetroot sugar.

Germany—Rostock (continued).

Accommodation.—The harbour has an area of 80 acres of water and a quay 6,000 ft. long. The depth of water at the quayside and in the harbour is 17 to 18 ft. There is a patent slip to take vessels up to 900 tons, and a floating dock for vessels up to 3,000 tons. The dock is 270 ft. long. There are sheers to lift 80 tons, and floating sheers to lift 40 tons, belonging to the Neptune shipbuilding yard. Outfits and repairs are done.

Pilotage.—From sea to Warnemünde, including light dues, 13 pf. per net reg. ton; from Warnemünde to sea, 10 pf. per net reg. ton. From Warnemünde to Rostock, and from Rostock to Warnemünde, as follows: Vessels from 50 to 100 reg. tons, 5 mk. Vessels from 100 to 150 reg. tons, 8 mk. For every 100 tons over, 2 mk. extra. Vessels are obliged to take a pilot. On showing the usual signal a pilot will at once come off in a boat, if the weather permits. If not able to come, signals are made by a flag from the west pier to point out the course to be steered.

Port Charges.—Port Dues:—Vessels entering or leaving with cargo, 50 pf. per reg. ton each way. Vessels entering or leaving in ballast, 25 pf. per reg. ton. each way. **Steam Towage:**—According to agreement at moderate terms. **Ballast:**— $2\frac{1}{2}$ mk. per boat load, containing two and a half tons, alongside. **Shipbroker:**—Clearance, 25 pf. per register ton. **Commission** on freight, $\frac{1}{2}$ per cent. **Stevedore:**—Loading, 35 pf. per ton for grain; discharging, 75 pf. per ton for coal, or 65 pf. under Balteon charter.

Pro Forma Charges on a steamer of 766 tons reg., cargo of 1,250 tons of coal in, and ballast out:—

	Mk.	pf.
Harbour dues at 75 pf. per reg. ton	574	50
Pilotage in and out, 23 pf. per reg. ton	176	18
Towage	30	00
Boat hire, one service	937	50
Clearance, 1,250 tons at 1d. per ton	106	10
Customs' dues, about	40	00
Petty expenses, etc.	12	00

1,876 28 = £92 0s. 4d.

RUESTERSIEL.

Ruestersiel, in lat. $53^{\circ}34'$ N., long. $8^{\circ}6'$ E., is situated on the river Jade.

Exports.—Oats.

Accommodation.—The harbour has only 7 ft. of water; vessels above that draught complete loading in the roads.

Pro Forma Charges on a vessel of 75 tons register, ballast in and cargo out, 17s. 3d.

RUGENWALDE.

Rugenwalde is in lat. $54^{\circ}25'$ N., long. $16^{\circ}25'$ E.

Population.—5,968.

Imports.—Coal and corn.

Export.—Pit-props.

Accommodation.—The inner harbour has an average depth of 14 ft. The outer harbour, which is formed by two moles, is about two

Germany—Rugenwalde (*continued*).

cables in extent, with an average depth of 15 ft. ; the entrance is 40 yards wide, with a depth of 15 ft. There is good anchorage outside in 7 to 8 fathoms. About 400 yards distant from the entrance a bridge crosses the harbour ; strong hawsers at the bow and stern should therefore be kept in readiness for checking the ship. The breadth of the harbour does not permit of vessels anchoring. Vessels which, on account of the shallow water in the harbour, are obliged to anchor in the roads, should, during stormy weather, put to sea until it moderates.

Pilotage.—Strangers should not attempt to enter without a pilot.

Port Charges.—Port Dues:—10 pf. per cubic metre. **Ship-brokers:**—10 pf. per cubic metre for clearance.

Pro Forma Charges on a vessel of 380 cubic metres (about 130 tons reg.) :—

	Mk.	pf.
Harbour dues, entering loaded	38	00
" " leaving in ballast	19	00
Pilotage in and out	4	00
Bridge due	0	50
Ballast, 20 pf. per last, 10 lasts	2	00
Freight brokerage, 5 per cent.	30	00
Clearing in and out at 10 pf.	38	00
Pilotage from Münde to inner basin	3	00

134 50 = £6 11s. 10d.

SCHLESWIG.

Schleswig is in lat. 54°30' N., long. 9°33' E.

Population.—20,000.

Imports.—Coal, wood, paving stones, and grain.

Accommodation.—The average depth of water here is from 12½ to 13 ft.

Pilotage.—Sea pilotage inwards is compulsory. From the sea to Schleswig quay, inwards, 12 pf. per cubic metre for steamers and sailing vessels.

Port Charges.—Harbour Dues:—18 pf. per cubic metre together in and out. **Towage:**—For small sailers, about £3 from Schleimünde to the quay at Schleswig. **Labour:**—4 mk. per man per day.

Pro Forma Charges on a steamer of 1,757 cubic metres with a cargo of coal in, and ballast out :—

	Mk.	pf.
Harbour dues, in	210	84
" " out	105	42
Pilotage	210	84
Conservancy dues	35	14
Customs' guard	29	05
Clearance	100	00
Discharging, 60·82 keel at 15 mk. 60 pf.	948	79

1,640 08 = £80 7s. 11d.

SCHULPERSIEL.

Schulpersiel, in lat. 54°16' N., long. 8°50' E., is situated on the river Eider, lying on the opposite shore to Tönning, but nearer the sea.

Germany—Schulpersiel (continued).

Accommodation.—The harbour is only suitable for vessels drawing about 6 ft. water.

Port Charges on a vessel of 60 tons register amounted to £3, including pilotage.

SCHWARZENHÜTTEN.

Schwarzenhütten is a little place on the river Oste, and is only frequented by small craft. There is 15 ft. of water in the harbour, and 8 ft. of water up to the cement factory. There are no expenses.

SONDERBERG.

Sonderberg is in lat. 54°55' N., long. 9°47' E.

Population.—6,500.

Imports.—Coal, food-stuffs, and building materials.

Exports.—Cattle, grain, and butter.

Accommodation.—The depth of water here is not affected by tides. Vessels up to 10 metres (32 ft. 9 in.) draught can use this harbour and vessels up to 5 metres (16½ ft.) can moor alongside the quay. There is a repairing yard for small vessels only. Railway connection with Flensburg and Tingleff.

Pilotage.—Not compulsory. 4 pf. per reg. ton for harbour pilot; double the amount for sea pilot.

Port Charges.—**Labour** :—60 to 80 pf. per hour. **Brokerage** :—3 per cent. on freight. **Harbour Dues** :—40 pf. per reg. ton.

Pro Forma Charges on a vessel arriving in Sonderberg with a cargo of coal and discharging same :—

	Mk.	pf.
Harbour dues at 12½ pf. per cubic metre	278	38
Sea pilot	74	39
Harbour pilot	22	19
Declaration	0	50
Clearance, 1d. per ton of goods	122	90
Postage, telegrams, and telephone	7	00
Custom dues	9	00
Boat money	8	00
	522	36 = £25 13s. 1d.

STETTIN.

Stettin, in lat. 53°23' N., long. 14°32' E., is situated on the river Oder, 36 miles from Swinemünde.

Population.—224,119.

Imports.—Coal, iron, coke, petroleum, herrings, dried fish, salt, coffee, tea, pipe-clay, wine, olive oil, sulphur, pyrites, soda, agricultural machinery, phosphate, grain, etc.

Exports.—Grain, flour, bran, potatoes, timber, staves, zinc, spirit, sugar, cement, retorts, fire-bricks, refined and raw rape oil, molasses, rags, bones, bricks, etc.

Accommodation.—The harbour has an average depth of 23 ft., and an area of 150 acres, with a quayage 2,600 ft. long. There are 18 mov-
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Germany—Stettin (continued).

able cranes belonging to the town, capable of lifting $1\frac{1}{2}$ to 5 tons each and one floating crane capable of lifting 40 tons. The harbour basin has an area of 29 acres and 8,500 ft. of quayage, with a depth alongside of 23 ft. There are 32 cranes, to lift from $1\frac{1}{2}$ to 5 tons, belonging to the town.

Equipment :—*Floating Dry Dock* No. 1 : 510 ft. long on bottom, 82 ft. entrance, depth on sill at ordinary springs high water, 24 ft. ; lifting power 11,000 tons. *Floating Dry Dock* No. 2 : 300 ft. long on bottom, 47 ft. entrance 13 ft. on sill high water ordinary springs, lifting power 2,500 tons. Three floating sheer legs to lift 150, 100, and 60 tons respectively. *Steel Floating Dry Dock, Section A* : 165 ft. long on bottom ; $52\frac{1}{2}$ ft. wide at entrance ; 15 ft. on sill at ordinary springs high water ; capable of lifting 1,700 tons. *Section B* : 131 ft. long on bottom ; $52\frac{1}{2}$ ft. wide at entrance ; 15 ft. on sill at ordinary springs, high water : capable of lifting 1,300 tons. These sections can be used together, and have a lifting power of 3,000 tons. One 5 ton crane, two sheer legs, 15 and 24 tons. *Steel Floating Dry Dock, Section A* : 221 ft. long on bottom, 62 ft. entrance, $14\frac{1}{2}$ ft. on sill, ordinary springs high water ; 1,700 tons lifting power. *Section B* : 99 ft. long on bottom, 72 ft. entrance, 14 ft. 8 in. on sill, ordinary springs high water ; 1,100 tons lifting power. These sections can be worked together, and will lift 2,800 tons. Sheer legs to lift 30 tons. All repairs can be carried out.

Vessels loaded with petroleum must come up in the Swante 3 miles below the town, and there await their turn for discharging at the petroleum wharves. The river between Swinemünde and Stettin is now being deepened to obtain a depth of 26 ft.

Regular steamship communication exists between New York, the Mediterranean ports, London, Liverpool, Hull, Leith, Rotterdam, Antwerp, Copenhagen, Gothenburg, Stockholm, Ystad, Reval, Libau, St. Petersburg, Hamburg, Emden, Bremen, and all the German Baltic ports.

Pilotage.—See **Swinemünde**.—The length of vessels compelled to employ a tug is 295 ft.

Port Charges.—**Harbour Dues** :—20 per cent. more than at Swinemünde. **Extra Harbour Dues** :—To be applied to dredging the deep waterway to Swinemünde on cargo of all vessels coming in or going out, and tonnage dues on cargo taken in, if 2,000 cubic metres or more : Vessels 2,000 to 2,500 cubic metres, 6 pf. per 1,000 kilos. on the total cargo carried ; above 2,500 cubic metres, 12 pf. per 1,000 kilos. **Bunker Coal** :—According to market price, either English or superior Silesian coal. **Labourage** :—For steamers : Discharging coal, from 50 to 60 pf. per ton ; iron, 45 pf. per ton ; general cargo, 60 pf. per ton ; herrings, 5 mk. per 100 barrels. Labourage loading steamers : Grain, 20 pf. per ton ; general cargo, 60 pf. per ton.

Pro Forma Charges on a steamship of 510 net register tons, from Middlesbrough, bound to Stettin, 1,543 cubic metres :—

	Mk.	pf.
Swinemünde harbour dues, inwards 12 pf. and outwards 6 pf. per cubic metre (payable here when ship is not searched at Swinemünde)	277	74
Town dues, $2\frac{1}{2}$ pf. per cubic metre	38	57
Harbour pilotage and bridge money	12	00
Clearing in and out, £5 for Stettin and Swinemünde	102	00
Pilot to Swinemünde from Stettin	47	00
River pilot fee and harbour pilot fee, voluntary	6	00
Boatmen	18	00
Stevedore and labourage, discharging at 45 pf. per ton	419	85
Carried forward	921	16

Germany—Stettin (*continued*).

	Mk.	pf.
Brought forward	921	16
Postage	1	00
Custom House officers for watching ship, about	28	00
Loan of scales	9	00
Telegrams to Hartlepool and Swinemünde	6	65
Swinemünde expenses	96	00
Gratuities and petty expenses	15	00
	<hr/> 1,076	<hr/> 81 = £52 15s. 8d.

Pro Forma Charges on a steamer of 6,000 cubic metres, coming from America with a cargo of about 4,400 tons of phosphate:—

	Mk.	pf.
Town dues at 2½ pf. per metre	150	00
Pilotage, bridge money and fees to pilot	18	00
Boat assistance	12	00
Harbour dues inwards at 5 pf. per metre, 20 per cent. additional	360	00
Harbour dues outwards at 5 pf. per metre, 20 per cent. additional	360	00
Consular fee	2	60
Custom House watch for two officers (about)	117	60
Pilotage to Swinemünde	153	00
Clearance and outwards	200	00
Expedition and petties	20	00
Stevedore	1,980	00
Postages and telegrams (about)	10	00
Towage from Swinemünde and back (agreement)	300	00
Navigation tax at 12 pf. per ton of 1,000 kilos.	536	45
Petty expenses	180	00
	<hr/> 4,399	<hr/> 65 = £215 13s. 5d.

STOLPMUNDE.

Stolpmünde is in lat. 54°34' N., long. 16°50' E.

Population.—2,375.

Accommodation.—The entrance to the harbour lies between two pier-heads, and is 130 ft. wide, with a depth of water of 15 ft. Inside the harbour there is a depth of 14 to 15 ft., with soft, muddy bottom which is regularly maintained by dredging, but heavy storms from the W. through N. round to E. are apt to diminish the depth. There is good anchorage in the roadstead in 6½ fathoms. Vessels should keep a suitable rope in readiness for the pilot-boat; also an anchor ready with 7 or 8 fathoms of chain. Strangers should not attempt to enter without a pilot.

Pilotage is included in the harbour dues.

Port Charges.—Harbour Dues:—For vessels in ballast, stones, coal, or phosphate: Steamers, 6 pf. per net cubic metre; sailers, 5 pf. per net cubic metre. Other cargoes: Steamers, 12 pf. per net cubic metre; sailers, 10 pf. per net cubic metre each way. **Ballast:**—Free. **Brokerage:**—10 pf. per net cubic metre. **Labour:**—Stevedore tariff. Provisions of all kinds to be had.

STRALSUND.

Stralsund, in lat. 54°19' N., long. 13°5' E., is situated on the Strela Sound, which divides the mainland from the Isle of Rügen.

Population.—31,809.

Imports.—Iron, coal, coke, wood, seed, petroleum, oil-cake, etc.

Exports.—Sugar, grain, straw, bricks, etc.

Accommodation.—The harbour is connected with the Baltic by four channels. The two most important entrances are those on the south-

Germany—Stralsund (*continued*).

east coast of Rügen, at Thissow and Rügen, where vessels drawing 15 ft. can enter and come right up to the town, alongside the quay, at ordinary water. Of the other two entrances, in a northerly direction, west of Rügen, the one at Barhoft is the more important one, and is used by all coasting vessels drawing less than 12 ft. 6 in. The old entrance at the Posthaus is only rarely used, and mostly by vessels seeking shelter. There is only 7 ft. of water now. There are three slips, which take vessels up to 800 tons to register, with lifting power of 200 tons. Two firms execute slight repairs to hull and engines. The harbour is 15 acres in extent, with a length of quayage of 2,000 ft. There are cranes on the Government quay to lift 25 tons.

Pilotage.—Pilot stations are at all the entrances, and pilots must be taken.

Port Charges on a steamer of 1,114 net cubic metres, or 449 net register tons, with 740 tons of coal in, and ballast out, about 850 marks.

SWINEMÜNDE.

Swinemünde in lat. $53^{\circ}55' N.$, long. $14^{\circ}15' E.$, is situated on the island of Usedom, at the entrance of the Channel of Swine, which connects the Grosse Haff with the Baltic.

Population.—13,272.

Import.—Coal.

Accommodation.—The water area of the harbour is 120 acres with a depth of 22 to 23 ft. at the entrance. The length of quayage is 2,000 ft. and the depth alongside 22 to 23 ft. There is a slip suitable for vessels to 300 tons, and a small floating dock. Small repairs to hull and engines can be done. The fairway is from 350 to 500 ft. wide. There is good anchorage in the roads as well as in the harbour.

Clearance at Night.—According to a notice issued by the President of the Government Department for the province of Pomerania vessels entering the harbour of Swinemünde may now be inspected and cleared by the sanitary police authorities at any time during the night, but vessels requiring to be so cleared must be reported (by telegraph or otherwise) before 9.30 p.m. at the office of the Schiffahrtsamt at Swinemünde. Similar arrangements with respect to the customs clearance have been in force for some time. Any vessel, therefore, having been previously reported by the ship's agent to the customs and sanitary authorities, may now be cleared at Swinemünde at any time during the night. These facilities will chiefly affect vessels proceeding to Stettin direct, without stopping at Swinemünde, and will enable several hours to be saved. In the case of vessels not going alongside the quay, owners or agents will have to convey pilots and customs and sanitary officers to and from the vessel.

Time Signals.—Chronometers can be corrected here. The signal is given 120 yards east of the tower of the New Navigation House, 114 ft. above ground, by means of a black ball 5 ft. in diameter. The ball is hoisted half-way up at 10 minutes before time and close up 3 minutes before. Time of signals being made:—

Greenwich mean time.			Local mean time.		
22	00	00	10	57	05.9
23	00	00	11	57	05.9
24	00	00	0	57	05.9
3	00	00	3	57	05.9

Germany—Swinemünde (continued).

Pilotage.—The pilotage out to and in from sea is included in the harbour dues. Before entering the port of Swinemünde ships are compelled to take a pilot on board. Only masters of vessels of less than 210 cubic metres are exempt, but the pilot commander is entitled to demand that such vessels be accompanied by a sea pilot. Pilotage from Swinemünde to Stettin :—

				Mk.	pf.
Ships of 40 cubic metres measurement				6	00
„ from 40 to 80 cubic metres				7	50
„ „ 81 „ 120 „ „				9	00
„ „ 121 „ 160 „ „				10	50
„ „ 161 „ 200 „ „				12	00
„ „ 201 „ 240 „ „				13	50
„ „ 241 „ 280 „ „				15	00
„ „ 281 „ 320 „ „				16	00

And 1 mk. additional for every 40 cubic metres above. For the river district between Swinemünde and Stettin ships have to engage a pilot. Those exempt from taking a pilot are : (a) Masters of ships not exceeding 210 cubic metres net capacity. (b) Masters of any kind of craft without decks. (c) Masters who, at their own request, have passed through the necessary examination for the Swinemünde-Stettin district. The pilot authorities shall, however, be entitled to demand that masters of ships mentioned under (c) take a pilot, if their vessels are wholly or partly loaded with solid ballast uncovered by any cargo, so that it is possible to throw such ballast overboard into the fairway.

Port Charges.—Harbour Dues :—For all vessels entering and leaving the harbour of Swinemünde—1. With cargoes : On entering or leaving, per cubic metre, 10 pf. 2. In ballast : On entering or leaving, per cubic metre, 5 pf. Ships going to Stettin have to pay 20 per cent. in addition to the Swinemünde harbour dues. Vessels with cargoes consisting entirely of coal, coke, turf, slates, tiles, bricks, paving and quarry stones, granite, limestone, gypsum, chalk, clay, sand, raw sulphur, salt, potatoes, maize, cement, tubes, lime, minerals, building and roofing materials, manures and similar products, to be charged the same as vessels in ballast, viz., 5 pf. per cubic metre. A vessel may carry, beside “ballast” goods, a part cargo of other goods up to 20 per cent. of her capacity (two cubic metres measurement taken at 1 ton weight) and still enjoy the above reduction. If the cargo discharged or shipped does not exceed one-fourth of the vessel’s carrying capacity, whether loaded with “ballast” or other goods, only half of the normal harbour dues on entering and clearing, i.e., 5 pf. per cubic metre, to be paid. No dues to be levied on :—

(a) Vessels in ballast that enter the harbour of Swinemünde in search of freight, and leave it in ballast.

(b) Vessels that enter the harbour to receive orders, and leave it without either discharging or taking in cargo.

(c) Vessels that enter the harbour on account of distress.

Vessels proceeding directly between any of the following ports, viz., Swinemünde, Colbergmünde, Stolpmünde, Rugenwalde, Danzig, Neufahrwasser, Pillau, Memel, Greifswald, Wolgast, and Stralsund, are exempt from the entrance dues of the harbour to which they are bound. **Towage** according to agreement. The signal for the steamboats is two flags at the main topgallant mast head, one above the other. **Ballast :—**1 mk. to 1 mk. 50 pf. per ton. **Water :—**Free.

Germany—Swinemünde (*continued*).

Pro Forma Charges on a steamship of 1,060 net register tons, from Newcastle, bound to Swinemünde, 3,000 cubic metres, loaded with 2,300 tons of coal :—

	Mk.	pf.
Swinemünde harbour dues inwards	300	00
Clearing, in and out, as agreed by charter. (When the charter stipulates, ships to be addressed to merchant brokers on usual terms, the clearance fees are 20 pf. per cubic metre)	600	00
Sea pilot fee inwards, 3 mk. ; outwards, 3 mk. voluntary	6	00
Boatmen in the harbour and to sea	24	00
Stevedore and labourage for discharging coal, at 18 mk. per keel	1,953	00
Custom House officers for watching ship	30	00
Telegrams to England, etc.	6	10
*Use of coal baskets, shovels, discharging gear, etc..	86	00
	3,005	10 = £147 6s. 1d.

* When the charter stipulates a fixed price for discharging, these charges are then included. They can be made when the discharging is to be effected at customary rate.

TÖNNING.

Tönning is in lat. 54°19' N., long. 8°54' E., at the mouth of the Eider river.

Population.—4,427.

Import.—Coal.

Accommodation.—The tidal harbour is well secured by piers, bulwarks, and mooring piles, and has a depth of 11 ft. at high water and 2 ft. at low, but vessels drawing 17 ft. can get up to Tönning, and lie always afloat in the roads 2 kilometres long, opposite the Custom House. There are four piers with 16½ ft. of water alongside at high tide and 7½ ft. at low tide, bottom soft mud. Depth of water at the Eider bar : low water, 9 to 9½ ft. ; high water, 18 ft. at ordinary spring tides. Strangers should never enter without a pilot. A Government tug can generally be had to tow vessels from the sea to Tönning. Railway communication with Hamburg and Denmark. There is a small slip to take vessels drawing 8 or 9 ft.

Pilotage.—Compulsory when drawing over 10 ft. ; 8 pf. per cubic metre up to 250 cubic metres ; above 250 cubic metres, 4 pf. per cubic metre. Winter pilotage, 50 per cent. more. Maximum charge : Summer, 71·50 mk. ; winter, 102·15 mk. in, and the same out. Pilots can be had at the pilot-vessel at the mouth of the river.

Port Charges.—Harbour Dues :—7 pf. per cubic metre when only discharging or loading ; when both, 15 pf. per cubic metre. **Clearance Fees** :—40·86–61·29 mk. per steamer. **Towage** :—According to situation, 61·29–122·58 mk. **Boat Hire** :—10 to 15 mk. **Consular Fees** :—2s. 6d. **Ballast** :—1 mk. per ton. **Labour** :—30 to 40 pf. per hour.

Pro Forma Charges on a steamer of 720 tons register, cargo of 1,570 tons in, and ballast out, drawing 17 ft. loaded :—

	Mk.	pf.
Harbour dues at 7 pf. per cubic metre	142	59
Pilotage, in and out, summer	143	00
Brokerage	61	29
Boat hire	10	00
Discharging, 1 mk. per ton	1,570	00
Postages, sundries, etc.	4	09

1,930 97 = £94 13s. 2d.

Germany.

TRAVEMÜNDE.

Travemünde, in lat. 53°58' N., long. 10°50' E., is situated at the mouth of the river Trave.

Population.—2,017.

Accommodation.—The depth of water at the entrance of the harbour and at the dolphin is 22 to 23 ft., on the bar 28 ft., and in the harbour 26 ft.

Pilotage and Port Charges.—See **Lubeck**.

VARELERHAFEN.

Varel, in lat. 53°24' N., long. 8°9' E., is in Oldenburg, and is near the mouth of the Jade.

Population.—5,400.

Import.—Timber.

Exports.—Coal and coke to Norway and Sweden.

Accommodation.—Average depth of water, 12 ft. The gates are 23½ ft. (7.5 metres) wide, and have a depth of 11 ft. (3.6 metres). There are three quays, 607, 784, and 151 ft. long respectively, belonging to the Harbour Commissioners. These have 12 ft. of water alongside, and can be reached by vessels drawing 11 ft. There is a graving dock 100 ft. long and 24 ft. 6 in. broad, in which vessels drawing up to 6 ft. can be docked.

Pilotage.—Not compulsory. If a pilot is required, the captain should give notice to the harbour master at Wilhelmshaven, and remain there till the pilot comes. Pilotage per reg. ton for steamer or sailing vessel, 20 mk. for the first day, and 3 mk. for every extra day. **Towage** from Wilhelmshaven to Varel varies from 50 to 80 mk., according to the size of the vessel.

Port Charges.—**Harbour Dues**:—18 pf. per reg. ton per week.

Labour:—4 mk. per day. **Ballast**:—1½ mk. per ton. **Clearance Fees**:—About 5 mk. **Brokerage**:—According to agreement.

Pro Forma Charges on a vessel of 100 tons reg., with a cargo of timber in and ballast out, drawing 10 ft. loaded:—

	Mk.	pf.
Harbour dues at 18 pf. per reg. ton	18	00
Pilotage, in and out from Wilhelmshaven	30	00
Towage (50 mk. in, about 30 mk. out)	80	00
	<hr/>	
	128	00 = £6 5s. 6d.

VEGESACK.

Vegesack, in lat. 53°13' N., long. 8°37' E., is on the river Weser, about 13 miles below Bremen.

Population.—4,141.

Accommodation.—There is a tidal harbour with a depth of water at high tide of 20 ft., and at low tide of 13 ft. The quay is 860 ft. long, with cranes to lift from 1½ to 2 tons, and staithe for shipment of coal from 25 to 30 tons per hour. On the south side of the harbour goods can be loaded direct from railway waggons on to the ship. A little below Vegesack is a shipbuilding yard, where steamers up to 8,000 tons are built.

Germany.**WARNEMÜNDE.**

Warnemünde, at the mouth of the river Warnow, is in lat. $54^{\circ}9' N.$, long. $12^{\circ}5' E.$

Population.—4,209.

Accommodation.—The roadstead is exposed to every wind, but has good holding ground. The best anchorage is in $5\frac{1}{2}$ fathoms, with the lighthouse bearing S. by E. The depth across the bar is 18 ft.; but after stormy weather the depth is often diminished to 17 ft., being flooded with sand, which is afterwards cleared away by a steam dredger, so that the normal depth of 18 ft. is again restored. From Warnemünde to Rostock the river has a depth of 15 to 16 ft., maintained by incessant dredging. The depth of water in Warnemünde harbour is 18 ft. The harbour has an area of 25 acres, and an entrance 328 ft. wide. The outer harbour has a width of 656 ft., and a length of quayage of 1,902 ft. The turning basin is 722 ft. wide, and has a quay 1,312 ft. long. The inner harbour is 1,443 ft. wide, with a quay of the same length. In the river the length of quayage is: Old Stream, 1,312 ft.; New Stream, 2,624 ft.

Pilotage.—See **Rostock.**

Port Charges.—See **Rostock.**

WARVERORT.

Warverort or Warwerort, in lat. $54^{\circ}10' N.$, long. $8^{\circ}50' E.$, is a small seaport town about half-way between the mouths of the Elbe and the Eider.

Export.—Cereals.

Accommodation.—The approaches are by two channels called the Norder Piep and Suder Piep. The latter is the one used by vessels bound for Warverort. It is well buoyed. There is a large fairway buoy at the entrance, painted yellow, with a staff and ball; and on the starboard side of the channel there are ten black buoys, numbered 1 to 10; whilst on the port side there are four white buoys marked A to D. Large vessels do not proceed further up than Büsum, about 3 miles W. of Warverort; here there is good anchorage for vessels of any draught. Warverort is not a suitable place for vessels of more than 11 ft. draught. At this draught they have to anchor in the channel about half a mile from the town, as there is only 8 ft. at high water alongside the quay. Vessels lying in the stream pay no dues.

Pilotage.—Pilots can seldom be obtained.

WEENER.

Weener, in lat. $53^{\circ}11' N.$, long. $7^{\circ}20' E.$, is situated on the river Ems, about 7 miles south of Leer.

Population.—3,872.

Accommodation.—A new pier on the river Ems has been constructed which is accessible for vessels up to 13 ft. draught. The depth at the entrance and at the quayside at ordinary springs is: High water, 14 to 15 ft.; low water, 8 to 9 ft.

Germany—Weener (continued).

Port Charges.—The port charges are trifling, only amounting to 30s. on a vessel of 90 tons.

WILHELMSHAVEN.

Wilhelmshaven, in lat. $53^{\circ}32'$ N., long. $8^{\circ}9'$ E., is on the left bank of the river Jade.

Population.—26,012.

Imports.—Coal, timber, potatoes, and bricks.

Exports.—Oats, beans, and peas.

Accommodation.—There are three torpedo graving docks and several graving docks capable of docking vessels of 20,000 tons displacement, belonging to the Government. There is about 650 ft. of quayage available for merchant vessels, and a dock, constructed in 1906, 585 ft. long at coping level, with $86\frac{3}{4}$ ft. breadth at entrance; depth at high water, ordinary springs, $37\frac{3}{4}$ ft. Merchant vessels discharge in the new harbour, called the Trade Port. Springs rise 12 ft., neaps 9 ft. The anchorage in the river, off the mouth of the harbour, is in 5 fathoms, and is not safe with strong southerly or northerly winds. Fresh water can be obtained free.

Time Signals.—Chronometers can be checked here. A black ball 5 ft. in diameter is hoisted half-way up 10 minutes before signal, close up at 3 minutes before signal, on south-west jetty of second entrance to harbour, 82 ft. above ground. Drop, 10 ft.

Greenwich mean time.		
23	00	00
24	00	00

Local mean time.		
11	32	37.5
0	32	37.5

Signals are made at noon and 1 p.m. Mid-European time, corresponding to 11 a.m. and noon Greenwich mean time.

Pilotage.—The pilots cruise off the mouth of the river. Pilotage for vessels of 14 ft. draught: Summer, in £4 10s., and out £4 10s.; harbour, in 10s., out 10s. Winter, 50 per cent. more.

Port Charges.—**Brokerage**:—1 per cent. on amount of freight for clearing and chartering. Commission for chartering, 2 per cent. **Ballast**:—1s. per ton.

Pro Forma Charges on a brig of 180 tons cargo in and ballast out, drawing 14 ft. loaded: In summer, £10 6s.; in winter, £15 9s.

WISCHHAFEN.

Wischhafen is in lat. $53^{\circ}47'$ N., long. $9^{\circ}17'$ E.

Accommodation.—It is an open roadstead in the river Elbe, opposite Glückstadt, and only frequented by vessels of small tonnage. It is dry at low water; springs rise $11\frac{1}{2}$ ft. Dangerous for vessels with a draught of 9 ft. and more.

Port Charges on a vessel of 70 tons register, including pilotage, about £2 10s.

WISMAR.

Wismar, in lat. $53^{\circ}54'$ N., long. $11^{\circ}28'$ E., is on the Baltic.

Germany—Wismar (*continued*).**Population.**—21,902.**Imports.**—Wood, coal, granite.**Exports.**—Grain, salt, sugar.**Accommodation.**—The water area is about 36 acres: Neuer Hafen (about) 10 acres, Alter Hafen (about) 26 acres. The total length of quayside is 4,500 ft. The depth at the entrance of the harbour and at quayside is 19 ft. There are cranes to lift 5 and 15 tons.**Pilotage.**—3 pf. per cubic metre inwards and outwards. Pilots can be obtained at Poel Island.**Port Charges.**—**Port Dues** :—26 pf. per cubic metre. **Shipbroker** :—20 pf. per register ton. **Stevedore** :—Discharging coal, 85 pf. per ton; loading sugar, etc., 45–50 pf. per ton; discharging wood, 1 mk. 75 pf. per standard. **Ballast** :—1 mk. 20 pf. per ton. **Towage** :—About 7 pf. per cubic metre.**Pro Forma Charges** on a steamer of 1,925 cubic metres, from England, with 1,400 tons of coal :—

	Mk.	pf.
Harbour and pilot dues	616	00
" pilot	3	50
Stevedore's bill, 85 pf. per ton (coal)	1,190	00
Custom House	30	00
petty expenses	8	00
Consul's fee	2	60
Pilot's fee	10	00
Petty expenses	5	00
Telegrams and postage	20	00
Clearance in and out	140	00

2,025 10 = £99 5s. 5d.

WOLGAST.

Wolgast, in lat. 54°4' N., long. 13°44' E., is situated on the river Peene, about 9 miles from the entrance.

Population.—8,346.**Imports.**—Coal, timber, deals, logwood, and sulphur.**Exports.**—Wheat, etc.**Accommodation.**—There is 15 ft. of water in the harbour. Vessels sometimes discharge and load at the island of Ruden, near the entrance, where there is a pilot station. There are two patent slips with lifting power of 650 tons each. The length of the quay is 1,200 ft., but there are no cranes.**Pilotage** :—For vessels of 600 cubic metres and upwards, 70 mk.**Port Charges.**—**Harbour Dues** :—With cargo in or out, per cubic metre, 10 pf.; ballast, in or out, per cubic metre, 5 pf. **Towage** :—As per agreement. **Ballast** :—1 mk. to 1 mk. 20 pf. per ton.

A steam-tug, from Wolgast to sea, towing a vessel of 198 tons and drawing 12 ft. of water, would cost £7 6s.

WOOLLERSUM.

Woollersum, in lat. 54°21' N., long. 9° E., is on the Eider between Friedrichstadt and Tönning. It is a tidal harbour, with mud bottom. Vessels drawing 11 ft. can get here.

Harbour Dues :—10 pf. per ton.

GIBRALTAR.

Gibraltar, in lat. $36^{\circ}8' N.$, long. $5^{\circ}22' W.$, is a British Crown Colony situated in the province of Andalusia, in Spain, commanding the entrance to the Mediterranean. The distance by sea from Liverpool is 1,290 miles. It has an area of $1\frac{7}{8}$ square miles, and a population, including the military, estimated in 1907 at 23,651. It has cable communication with Great Britain, the Continent of Europe, and Tangier, via the Eastern Telegraph Company's lines. There is postal communication daily with England. The legal currency is that of the United Kingdom, but tradesmen and shopkeepers accept in payment the coins current in Spain at the prevailing rate of exchange; this in 1908 averaged 27·55 pesetas=£1. The following weights and measures are usually employed in commercial transactions :—

1 pipe	= 105 Imperial gallons.
1 arroba (liquid)	= 2·77 „
1 „ (weight)	= 26 lb. avoirdupois.
1 quintal (100 lb.)	= 101 $\frac{1}{2}$ lb.
5 fanegas of grain	= 7 $\frac{3}{8}$ Imperial bushel.

Imports.—Cottons, linens, woollens, hardware, coffee, grain, flour, petroleum, timber, cattle, coal, and colonial produce.

Exports.—Tobacco, wine, fruit, and cork.

Accommodation.—Shipmasters can enter this port at any time or state of the tide. There is ample accommodation. Vessels of the largest size may anchor in the bay in $3\frac{1}{2}$ to 25 fathoms. The only danger in entering is the Pearl Rock, which is about 1 mile south from Cabrita Point, with 10 ft. water on it. Its position is shown at night by a strip of red light from the Europa Point Lighthouse. This red light is visible over an area of 23 degrees, viz., within the bearings by compass of S.W. by W. $\frac{3}{4}$ W., and W. $\frac{1}{4}$ S. from the lighthouse, and extends three-quarters of a mile to the southward of the Pearl Rock. A wide berth should be given to the extremity of Gibraltar Mole, in consequence of the uncertainty of the set of the tides. It is dangerous for vessels to attempt to come alongside the mole or to anchor under its shelter in dark nights. In rounding Europa Point with an easterly wind, vessels should stand well over towards Algeciras, on the Spanish or opposite shore, and beat up to the anchorage. Masters of vessels, when passing Gibraltar, should display their private signals, by which Lloyd's agent can report them. The only signals recognized are those of the Commercial Code.

The harbour works are now completed. The Admiralty possess four dry docks of the following dimensions :—

No. 1 Dock: Length, 851 ft. 6 in. on blocks. Width at entrance, 93 ft. 8 in. Depth on the sill, 38 ft. 7 in.
No. 2 Dock: Length, 552 ft. on blocks. Width at entrance, 93 ft. 8 in. Depth on the sill, 38 ft. 7 in.
No. 3 Dock: Length, 450 ft. 10 in. on blocks. Width at entrance, 93 ft. 8 in. Depth on the sill, 38 ft. 7 in.
No. 4 Dock: Length, 251 ft. 6 in. on blocks. Width at entrance, 46 ft. Depth on the sill, 14 ft. 1 in.

The width and the depth given are at high water ordinary spring level.

Gibraltar.

There are two patent slips to take vessels of 390 tons, one to take a vessel 330 tons, and two to take vessels of 130 tons.

Merchant vessels, under special circumstances, are granted the use of the docks. Application must be made to the Admiral Superintendent, and special rules have to be complied with. In addition to the dock yard there is an establishment where ordinary repairs can be executed.

Railway connection with continental system through Algeciras Railway Company. There is a crane on the wall of the Old Mole to raise $2\frac{1}{2}$ tons.

Time Signals.—Chronometers can be checked. Ball is hoisted five minutes before every hour on the naval signal station, Windmill Hill Flats, and is dropped at each precise hour of Greenwich mean time, from sunrise to sunset on all days, Sundays included.

Pilotage.—Pilots are available when signalled for; they do not cruise about. Not compulsory. £1 per vessel, irrespective of size, and whether steam or sail.

Port Charges.—Port Dues:—Vessels under 10 tons register, free; vessels above 10 tons register, a uniform scale of 2s. for every 100 tons register tonnage or portion thereof, with a maximum of £4. **Towage:**—According to agreement. **Ballast:**—2s. 6d. per ton. **Labour:**—6s. per man per day for working cargo, etc. **Brokerage:**—Uniform charge for doing ship's business, £2 2s. **Charge for the use of Dry Docks:**—£20, irrespective of size. This does not include the cost of docking and undocking.

HEALTH GUARD'S FEES, ETC.

	£	s.	d.
For any service not exceeding 3 hours	0	2	0
" " 6 "	0	4	0
" " 12 "	0	8	0
" " 18 "	0	12	0
Watching a vessel in quarantine in guard boat for 24 hours (including hire of boat)	1	0	0
For any time not exceeding 12 hours after the expiration of 24 hours	0	10	0
When embarked on board a vessel in the bay for the performance of quarantine, per 24 hours	0	4	0
When embarked on board tug steamers, not exceeding 3 hours	0	2	0
" " " 6 "	0	4	0
" " " over 6 hours up to 24 hours	0	6	0
For every bill of health	0	4	0
For every endorsement on a bill of health	0	4	0

Water:—7s. 6d. per ton of 250 gallons, free alongside.

GREECE.

Greece is a small country occupying the S.W. corner of the Balkan Peninsula; it has a total area of 25,014 square miles, with a population of 2,631,952. The coast, which is everywhere mountainous, is deeply indented by great gulfs and innumerable bays, which form a number of excellent harbours. The form of government is that of a limited monarchy; the executive authority is vested in the King and his responsible Ministers, and the whole legislative power in a popularly elected Chamber of Representatives.

Commerce.—The trade of Greece is of an annual value of about $10\frac{1}{2}$ million pounds sterling; imports, $5\frac{3}{4}$ millions, exports, $4\frac{3}{4}$ millions. "Most favoured nation" treatment is accorded to British trade in terms of a commercial treaty signed in 1886; this was extended in 1904 so as to include all British possessions, colonies, etc., which accord the "most favoured nation" treatment to Greece. Customs duties, which are heavy, are payable in gold.

Mercantile Marine.—The commercial navy consists of 1,374 vessels, having a total tonnage of 431,059, made up as follows: Steam, 282 ships with 276,147 tons; sail, 1,092 vessels with 154,912 tons.

Internal Communications.—Considerable improvement has been made in recent years with the means of communication, but they still remain somewhat defective. There are 2,870 miles of roads and about 900 miles of railway in the kingdom. The ship canal across the Isthmus of Corinth has considerably shortened the voyage between the Ægean and Ionian Seas.

Currency, Weights and Measures.—In 1868 Greece entered the Latin Monetary Union, and although the systematic names for the coins of the kingdom are the drachma and the lepta, they are in very many districts referred to as francs and centimes, with which they are identical, i.e., 1 drachma of 100 lepta= $9\frac{1}{2}d.$; 25·225 drachmai=£1. The actual currency of Greece, however, is an inconvertible paper money, consisting of Government notes for 2 drachmai, and 1 drachma, and bank notes for 10, 25, 50, 100, 500 and 1,000 drachmai. The rate of exchange has not shown any great fluctuation recently, the average for 1907 having been 27·19 currency drachmai=£1 sterling. On January 30, 1893, a Royal decree was promulgated by which the gold coins of Austria, Denmark, Egypt, Germany, Great Britain, Russia, Spain, Turkey, and the United States were declared legal tender at a reduction of one-fourth per cent. from their nominal value. The metric system of measurement was introduced, so far as measures of length were concerned, in 1898. The change from the old system, so far as measures of weight and capacity are concerned, is to be gradually accomplished. The measures with their equivalents are as follows:—

LENGTH.

10 gramma	=	1 daktylas	=	1 centimetre	=	·393 inches.
10 daktylor	=	1 palamé	=	1 decimetre	=	3·937 „
10 palamai	=	1 pecheus	=	1 metre	=	39·370 „

Greece.**CAPACITY—DRY GOODS AND LIQUIDS.**

10 kyboi	=	1 mystron	=	1 centilitre	=	·017598	Imp. pints.
10 mystra	=	1 kotyle	=	1 decilitre	=	·17598	„ „
10 kotylai	=	1 litra	=	1 litre	=	1·7598	„ „
100 litrai	=	1 koilon	=	1 hectolitre	=	21·9975	„ gallons.

COMMERCIAL WEIGHTS.

1,500 drachmai	=	1 mna	=	1½ kilogrammes	=	3·306 lb.
100 mnai	=	1 tolanton	=	1½ quintal	=	330·693 „
10 tolanta	=	1 tenos	=	1½ tonneaux	=	29·526 cwt.
100 tons English	=	115 Greek	(ship's measurement).			

The following are in use in Patras :—

2,128 Venetian pounds	=	1 ton.
400 drams	=	1 oke.
1 oke	=	2½ lb.
1 kilo, or chilo	=	1 bushel.

The following are in use in the Ionian Islands :—

1 libbra, or pound	=	1 lb. avoirdupois.
1 braccio	=	27 inches.
1 dicotili	=	1 pint.
1 barrel	=	16 imperial gallons.
1 quintal, or 44 okes	=	123 lb. avoirdupois.

The weight in use at Syra is the Turkish quintal of 44 okes. 18 quintals or 792 okes=1 ton. The measures in use here are the French metre and the Turkish pic, the latter being equal to 64 centimetres or 25½ in.

Light and Harbour Dues.—1. Greek steamers and foreign vessels which enjoy by treaty national treatment, sailing from abroad and arriving at any port of the kingdom pay the following port and lighthouse dues :—

	Gold drachmai per reg. ton.
Loading and discharging, if over two-fifths of registered tonnage .	1 00
Loading and discharging, if from one-fifth to two-fifths of registered tonnage	0 50
Loading and discharging, if less than one-fifth	0 30
Discharging only or loading only, if over one-fifth of registered tonnage	0 50
Up to one-fifth of registered tonnage	0 30
If remaining in port over 72 hours without loading or discharging, per registered ton	0 30
If disembarking or embarking passengers, and remaining in port over 72 hours, per registered ton	0 30
If disembarking or embarking passengers and remaining in port under 72 hours—either 30 leptas per register ton, or 10 gold drachmai per passenger, at captain's option.	
No charge for remaining in port under 72 hours if neither embarking nor disembarking passengers or cargo.	

The steamers mentioned in this article, when touching, after their first arrival at a Greek port, at other Greek ports, if they do not touch meanwhile at a foreign port, are exempted within a month from the first arrival from any further port and light dues of an equal amount to those first paid or of a sum less than them, paying only the difference that may be in excess if the dues be higher.

2. Greek steamers and foreign vessels which enjoy by treaty national treatment, which are employed in coasting trade within the realm without touching at foreign ports, except in the case of *force majeure*, when they do not ship or load merchandise and passengers, shall pay port and lighthouse dues in all as follows :—

	Gold drachmai per reg. ton.
Landing and taking on board cargo or passengers at the same port	0 50
Landing only or taking on board cargo or passengers	0 30
If without landing or taking on board passengers or cargo they remain in port more than 72 hours	0 20

Greece.

Steamers mentioned in this article, if they have paid within a month port and light dues to the amount of 50 lepta per ton, are exempted within the same month from any other such dues.

Steamers mentioned in the two preceding articles are exempted within the same year from any further payment of dues as soon as the dues paid or advanced by them shall amount to six drachmai per ton and per year.

Steamers which keep a regular itinerary, belonging to companies or private persons, which may undertake by special conventions to carry out postal service of the realm without any charge on all their regular calls at Greek ports, shall pay the dues established in Article I, reduced by 30 per cent. If, however, they pay in advance one drachma per ton for each quarter, they shall be exempted within the same quarter from any further payment of such dues.

3. Sailing ships, Greek and foreign, which enjoy by treaty national treatment of a capacity of above 60 tons, sailing from abroad and arriving at some port of the kingdom, pay port and lighthouse dues as follows :—

	Gold drachmai per reg. ton.
Landing and taking on board cargo at the port of arrival . . .	0 40
Landing only or taking on board only cargo at the same port . . .	0 30
If without landing or taking on board cargo they remain in port more than 10 days	0 20

The sailing vessels above-mentioned, which sailed from other ports of the kingdom, as well as sailing vessels which have a capacity not exceeding 60 tons, no matter from what port they may have sailed, pay one-half only of the port and lighthouse dues, according to the different circumstances established in this article.

The above-mentioned sailing vessels, when they pay in advance or pay altogether port and lighthouse dues amounting to two drachmai per ton and per year, are exempted from any further payment of light dues within the same year.

4. Tugs and lighters pay 1 drachma per ton once for all at the beginning of each year.

5. Foreign merchant vessels, sailing or steamers, which do not enjoy by treaties similar treatment to Greek vessels pay double the dues above-mentioned on the different occasions. They cannot claim the right of limitation of taxation established on behalf of the Greek vessels, or of foreign vessels which enjoy similar treatment to that of Greek vessels.

6. Vessels which, having sailed from abroad, have touched at a port at which the importation from abroad is not permitted, when they subsequently arrive at a port at which importation is permitted, shall be considered as arriving from abroad.

7. The dues are calculated on the net tonnage of vessels. Fractions of less than half a ton are omitted, but over half a ton are counted and taxed as a whole ton.

8. The following are exempted from the payment of any dues :—

(1) War ships, Greek or foreign, and those ships which may belong to the service of the realm.

(2) Steam yachts, Greek or foreign, which may be recognized as such by their respective Governments, as long as they do not perform any mercantile transaction.

(3) Small vessels of a capacity of 10 tons and under.

Greece.

(4) Any vessel returning to the port from which it sailed without touching at any other port.

(5) Ships launched from shipbuilding yards which are sent to other ports to be fitted out.

9. Merchant ships, sailing or steamers, Greek or foreign, which, having sustained damage during a voyage, arrive at a Greek port for repairs, are exempted from the payment of light and port dues during the time in which they stay in port, if they do not engage in any commercial transaction, or such that may require the payment of dues. The purchase of things needed for the repairs of the ship is not considered a commercial transaction, neither likewise is the temporary discharge of the cargo, when it is done for carrying out the necessary repairs, if, when the repairs are finished, the whole cargo be put on board again.

10. Sailing vessels and steamers, Greek or foreign, arriving at any of the ports of the kingdom and not landing or taking cargo or passengers on board, if they stay in port less than 10 days in the case of sailing vessels, and less than 72 hours in the case of steamers, are exempted from payment of port and light dues. The ships in question, within the time established above, may receive money and take in coal necessary for their use, victuals or other necessities for their voyage, or land anybody who may be ill.

11. In calculating these dues the capacity of steamers shall be accounted entire only up to 1,000 tons; the tons beyond 1,000 up to 1,500 shall be accounted reduced to one-half; from 1,500 up to 2,000 tons they shall be accounted reduced to one-third; and from 2,000 up to 2,500 to one-fourth; the tons beyond this figure not being accounted for. Thus, a steamer of 3,000 tons net reg. would pay dues on the following basis:—

First 1,000 tons in full	=	.	.	.	.	.	.	1,000 tons.
From 1,001 to 1,500—one-half	=	.	.	.	.	.	.	250 "
" 1,501 to 2,000—one-third	=	.	.	.	.	.	.	166 $\frac{2}{3}$ "
" 2,001 to 2,500—one-fourth	=	.	.	.	.	.	.	125 "
" 2,501 to 3,000—no charge.								

Total tonnage on which dues are to be paid	1,541 $\frac{2}{3}$ tons.
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12. No ship can receive its papers from the port authority unless proof be given by the production of vouchers of the payment of the dues to which it is liable. The port and light dues of steamers engaged in regular voyages, on a fixed itinerary, must be paid by their respective agents or the directors of the companies established in Greece to which such steamers belong.

13. Every captain or commander who may sail without paying light or port dues to which he may be liable, shall be subject, by a decree of the Ministry of Marine, to a fine equal to ten times the dues which he should have paid.

Ships' Manifest Regulations.—Any captain of a steamer or sailing vessel under any flag whatsoever intending to enter in or touch at a Greek port, is bound to deliver a manifest of his cargo to the Greek consular authority of the port where he received the goods on his ship, and to attach the bills of lading on the manifest. If the cargo has been taken from more than one port, he is bound to make mention of the goods taken at the preceding ports in the manifest delivered at the second port. The manifest shall be drawn up on the basis of the bill of lading.

Greece.

Should the cargo belong to the captain, the manifest shall state the details of the import declaration, viz., the kind and the quantity of the goods, in accordance with the divisions of the Customs tariff; but with regard to goods laden loose, in bulk, or in pile, the term "approximately" shall hold good. The captain must also state in the manifest the goods which are consigned to ports of foreign States.

Emigration.—At the present time (1908) there are no specific regulations, so far as cubic space and food are concerned, governing the departure of emigrants from ports in the kingdom, but the subject is occupying the attention of the Greek legislature. Neither are there any definite rules with regard to the immigration of undesirable persons.

AGASTIRA, OR ERGASTERIA.

(See **Laurium**, p. 281.)

Agastira is in lat. $37^{\circ}43'$ N., long. $24^{\circ}2'$ E.

Exports.—Iron, silver, and lead ores.

Accommodation.—The anchorage, in from 3 to 8 fathoms of water, is open to the east. It is 4 cables wide, has a mud bottom, and provides but indifferent holding ground. There is a jetty with 23 ft. of water alongside, where ore can be loaded at the rate of 500 to 800 tons per day. An embankment has been constructed round the side of the bay, and there is a stone jetty at its head. A railway 6 miles long connects the port with the silver and lead mines. On a hill, at the south side of the port, is a tall chimney belonging to the smelting works, which, being very conspicuous, affords an excellent mark to captains when approaching the port. Provisions are plentiful.

Pro Forma Charges on a steamer of 1,361 reg. tons, discharging coal at Agastira:—

	£	s.	d.
Harbour, health, and light dues, manifest, stamps, and gratuities	27	6	3
Consular fees	0	2	6
Telegrams and postage	1	14	8
Pilotage in and out	5	10	0
Boat for mooring and unmooring	2	0	0
Shifting	1	0	0
Watchman on board, 9 days at 4s. per day	1	16	0
Doctor's inspection	0	8	0
Boat hire, 5 days at 4s. per day	1	0	0
Provisions	10	14	0
Discharging 826 $\frac{1}{2}$ tons of coal at 10d. per ton	34	8	9
Discharging 1,240 $\frac{1}{2}$ tons of coke, at 1s. per ton	62	0	6
Cash to captain	1	18	7
Agency	5	5	0
	£155	4	3

Pro Forma Charges on a steamer of 664.95 reg. tons, loading ore at Agastira:—

	£	s.	d.
Harbour, light, and health dues, manifest, stamps, and gratuities	26	12	0
Consular fees	0	12	6
Telegrams and postage	1	4	0
Pilotage in and out	5	10	0
Carried forward	£33	18	6

Greece—Agastira or Ergasteria (*continued*).

	£	s.	d.
Brought forward	33	18	6
Boat for mooring and unmooring	1	10	0
Boat hire, 8 days at 4s. per day	1	12	0
Doctor's inspection	0	10	0
Provisions	7	18	8
Loading 1,214 tons of ore at 10d. per ton	50	11	8
Cash to captain	0	4	0
Agency	5	5	0
	<hr/>		
Less demurrage	£101	9	10
	13	0	0
	<hr/>		
Interest and insurance at 3 per cent	£88	9	10
	2	13	2
	<hr/>		
	£91	3	0

AMORGO ISLAND.

Amorgo Island is in lat. 36°50' N., long. 25°55' E. Port St. Anna, on the north side of the island, has an excellent harbour with good anchorage in 3 to 4 fathoms, close to the shore.

Export.—Oil.

ARGOSTOLI.

Argostoli, in lat. 38°10' N., long. 20°29' E., is on the S.W. side of the island of Cephalonia.

Population.—10,000.

Imports.—Grain, bread stuffs, cotton, linen and woollen fabrics, coffee, sugar, fish (dried and in pickle), groceries, iron, hardware, timber, hides, leather, sulphur, etc.

Exports.—Currants, wine, and olive oil.

Accommodation.—The harbour has good and safe anchorage in 3 to 5 fathoms of water, close to the town, though it becomes gradually shallower nearer the quay. At the entrance to the harbour the depth is greater, and the anchorage equally as good. Vessels loading at Cephalonia generally take about half their cargo at Argostoli, and the rest at Lixuri, three miles distant, where a little over half the currant crop is exported. These two ports are considered as one in all charters, according to custom. There are no tugs at Argostoli, but the ferry boat which runs between this port and that of Lixuri, at the entrance of Livadi Bay, is occasionally employed in towing vessels into or out of Argostoli harbour, the usual charge for each tow being £1. A vessel arriving from an infected port will have to proceed either to Corfu or to Trizonia, near Patras, in order to perform her quarantine, as there is no lazaretto on this island; but if she is subject only to five days' observation, operations are permitted under the usual sanitary precautions.

Pilotage.—Harbour pilotage is not compulsory, but should a pilot be required the usual charge is £1.

Port Charges.—Port, Light, and Health Dues:—See Greece. **Water:**—There is no fixed charge for supplying water to vessels, but it can be obtained at about 4s. per ton. **Labour:**—Dear. **Stowage:**—1s. 3d. per ton gross on currants, wine, and olive oil. **Foreman Stevedore:**—8s. per day. **Discharging Coal:**—1s. 3d. per ton. **Brokerage:**—£2 2s. Custom House permits, manifest, stamped paper, and gratuities, £2 2s. **Fresh**

Greece—Argostoli (continued).

Provisions:—Obtainable at the following prices : Beef, 5½d. per lb. ; bread, 1½d. per lb. ; vegetables, 1d. per lb. .

Pro Forma Charges on a steamer of 698 tons register, with cargo of coal for this port :—

	Drs.	£	s.	d.
Argostoli Harbour—				
For anchorage and light dues on 698 tons, at 50 lepta (gold) per ton	349			
Health office dues for bill of health, 2 lepta per ton, in currency drs. 13-96, say	8			
	Gold drs.	357	14	3 3
Custom House entries, doctor's fee, manifest, stamped paper, and sundry customary gratuities		2	2	0
Entering and clearing		2	2	0
Pilotage on entering		1	0	0
Discharging 1,200 tons of coal at 1s. 3d. per ton		75	0	0
Brokerage on £500, balance of outward freight cashed from the consignee at ½ per cent.		2	10	0
British consular fees		0	2	6
Provisions account for fresh provisions supplied		3	0	0
Boat hire, postages, and petties		1	15	0
		£101	14	9

Pro Forma Charges on a steamer of 698 tons, with a cargo of coal from Cardiff, and loading with currants for Holland :—

	Drs.	£	s.	d.
Argostoli Harbour—				
For anchorage and light dues on 698 tons, at 50 lepta (gold) per ton	349			
Health offices dues for bill of health, 2 lepta per ton, in currency drs. 13-96, say	8			
	Gold drs.	357	14	3 3
Custom House entries, doctor's fee, manifest, stamped paper, and sundry customary gratuities		2	2	0
Entering and clearing		2	2	0
Pilotage on entering		1	0	0
Discharging 1,200 tons of coal at 1s. 3d. per ton		75	0	0
Brokerage on £500, balance of outward freight cashed from the consignee at ½ per cent.		2	10	0
British consular fees for endorsement of articles and bill of health for Malta		0	12	6
Provision account for fresh provisions		6	10	0
Boat hire, postages, and petties.		1	15	0
Lixuri harbour (where the vessel took her homeward cargo)—				
For anchorage and light dues on 698 tons, at 50 lepta per ton, in gold drs.	349			
Health office dues for endorsement of bill of health, 1 lepta per ton, in currency drs. 6-98, say	4			
	Gold drs.	353	14	2 5
Commission on homeward cargo, viz., freight on 920 tons at 20s. in full for Amsterdam, £920 at 5 per cent.		46	0	0
Stowing of 920 tons, at 1s. 3d. per ton		57	10	0
Superintending stevedore for loading, 7 days at 8s. per day		2	16	0
		£226	3	2

ATALANDO.

Atalando, in lat. 38°40' N., long. 23°40' E., is on the N. side of the island of Eubœa.

Export.—Chrome ore.

Greece—Atalando (*continued*).

Accommodation.—The place is small, there not being room to swing in. Vessels of 200 tons moor with both anchors out, one to the N.W. and the other to the N.E., and two mooring chains to rocks, one from each quarter. This is in 12 fathoms. A larger sized vessel might moor further out in 20 fathoms, where they could swing. Cargo is brought off in small boats, and shipmasters should be careful to have in their charters, "Cargo to be brought alongside," as there is at times a heavy surf. A man is usually procured at the island of Skiatho, about 19 miles N.W. of Atalando, who acts as interpreter. He usually receives £5 for the round. No one speaks English at Atalando. The only charge made here is for a bill of health, 8s.

PORT KAMISI, or Manduvi, is a small place about 4 miles W. of Atalando.

Export.—White stone.

Fresh provisions are cheap; beef, 3*d.* per lb.; sheep about 10s. each; fresh water is plentiful.

At Skiatho, also, fresh provisions can be obtained at moderate charges.

CALAMATA.

Calamata, or Kalamata, in lat. 37°3' N., long. 22°10' E., is at the head of the Gulf of Messinias.

Population.—20,000.

Imports.—Manufactured goods, wood, sugar, hardware, glass, sulphur, etc.

Exports.—Figs, olive oil, wheat, gall nuts, currants, honey, oranges, and vermillion.

Accommodation.—The harbour has an area of 341,000 square yards, and is formed by a mole running straight out from the shore to a distance of 980 ft., and by a breakwater which runs out parallel to the mole and then curves round till its extremity is directly opposite the mole. The breakwater is 2,850 ft. long, and the entrance, which is the distance between the end of the breakwater and the end of the mole, is 650 ft. wide, with a depth near the breakwater of 35 ft., shelving up to the mole, where the depth is only 19 ft. The depth of the harbour along the breakwater canal to the dock is 22 ft. The dock has an area of 27,000 square yards. The harbour affords good shelter, and loading can continue during bad weather as, although the gulf is open to the S. and S.W., the harbour is only open to the E. Work in connection with the deepening of the harbour has been started. Supplies of all kinds are plentiful and cheap. The port is healthy.

Port Charges.—**Anchorage and Light Dues:**—See **Greece.** **Ballast:**—4 to 5 drachmai f. o. b.

CHALKIS and EURIPO STRAITS.

Chalkis, or Chalcis, in lat. 38°27' N., long. 23°37' E., is situated on the island of Eubœa or Negropont, at the narrowest part of the Euripo Straits, which separate the island from the mainland of Eastern Greece.

Population.—10,960.

Imports.—Corn, colonial goods, etc.

Exports.—Wines, oils, fruits, magnesite, etc.

Greece—Chalkis and Euripo Straits (continued).

Accommodation.—The harbour is small, but deep and secure. A movable bridge at Chalkis connects the island with the mainland.

Port Charges.—Vessels passing through the Straits have to pay the following tariff: 50 to 100 tons, 30 lepta per ton; 100 to 300 tons, 20 lepta per ton; more than 300 tons, 15 lepta per ton. **Ballast:**—5 dr. per ton. **Labour:**—3 to 4 dr. per day. **Boat Hire:**—3 dr. per hour.

CORFU, ISLAND OF.

Corfu, in lat. 39°30' N., long. 19°55' E., is one of the most important islands in the Ionian Group.

Population.—Island, 99,571; town, 27,397.

Accommodation.—The harbour, on the E. coast of the island, is safe, being protected by a mole; but it is only suitable for small vessels drawing about 11 ft. of water. Large vessels anchor in the roadstead in 12 to 15 fathoms half way between Corfu and the island of Vido. Here they are protected on the N. by Vido. Whenever a strong N.W. wind prevails it renders work alongside difficult.

Pilotage.—Optional. If required, £1 1s. Steamers proceeding to the coal discharging berth are recommended to take a pilot, as there are a number of sunken rocks, which are not charted, in the neighbourhood, owing to the incomplete nature of the harbour works.

Port Charges.—Anchorage and Light Dues:—50 centimes per ton (as per ship's reg.) on a vessel loading or discharging, and double if both loading and discharging. If the quantity of cargo loaded ^{and} or discharged does not exceed one-fifth of the net register of the vessel, then the dues chargeable are only 30 centimes. If the quantity loaded and discharged exceeds one-fifth but does not exceed two-fifths of the tonnage, the charge is 50 centimes. In these cases, if the vessel proceeds to any other Greek port, the remaining 20 centimes or 50 centimes, or both, are chargeable, as quantity worked may exceed the one-fifth, or, in the case of both loading and discharging, exceed the two-fifths.

Vessels may proceed to any number of ports in Greece during the space of one month without paying further light and port dues, provided they do not go to any foreign port, in the latter case on returning to Greece, dues are chargeable afresh.

Vessels over 1,000 tons net reg. pay on the first 1,000; half on the next 500; and one-third on the remaining tonnage.

Example. A steamer of 1,836 tons net reg. would pay:—

1st, 1,000	1,000
2nd, 500	250
3rd, 336	112

1,836 pays as 1,362

The one-fifth and two-fifths would be reckoned on the 1,362 tons.

Steamers having postal conventions pay only seven-tenths of any of the above dues. All the above are payable in gold.

Health Dues:—2 leptas currency per ton at the first port, and 1 lepta at subsequent ports, on the net register of the vessel, but not on a reduced tonnage as above. **Entering and Clearing:**—£2 2s. 0d.

Water.—Good fresh water may be obtained at 3s. 6d. per ton.

Coal:—Free on board 25s. to 30s. per ton.

CORINTH CANAL.

This canal, in lat. $38^{\circ}0'$ N., long. $23^{\circ}10'$ E., connects the Gulf of Corinth with the Gulf of Athens, and is available to all vessels whose draught does not exceed $23\frac{1}{2}$ ft. and which are not greater in beam than $65\frac{1}{2}$ ft. The canal is 3 miles 1,610 yards long, and is lighted by electricity. The saving which may be effected by using the canal may be gathered from the following details:—

Vessels going from Malta to Piræus save 34 miles; from Messina to Piræus, 74 miles; from Brindisi to Piræus, 131 miles; from Corfu to Piræus, 133 miles; from Brindisi to Sunium to Piræus, 92 miles; from Corfu to Sunium to Piræus, 93 miles.

REGULATIONS FOR NAVIGATION IN THE CANAL.

1. Masters of vessels shall conform to the regulations, obey all signals mentioned therein, and comply with any requisitions made to them to execute the regulations. A copy of the regulations will be supplied to them on demand.

2. The transit through the Corinth Canal is open to vessels of all nationalities, provided (when the necessary depth has been obtained) their draught of water does not exceed $23\frac{1}{2}$ ft., and that they are of not more than $65\frac{1}{2}$ ft. beam. Sailing vessels of more than 4 tons must be towed through. Steam vessels may pass through the canal under their own steam, or be towed. The canal authorities are not compelled to tow steam vessels, but if there are tugs disengaged it will be done.

3. The speed of vessels must be reduced, but not so much as to affect their steering capabilities.

4. Masters of vessels passing through the canal must pay all dues for passage at the entrance, and, when necessary, those for towage and pilotage. Also give the following information in writing:—Description of the vessel; name and nationality of the vessel; name of the master; name and address of the owners; port of sailing; port of destination; draught of water; number of passengers, to be ascertained from the passage list; statement of the crew; tonnage and nature of the cargo; net tonnage, to be ascertained by the vessel's official papers, and determined in conformity with the rules of the International Tonnage Commission, held at Constantinople in 1873.

5. The canal authorities determine the time of departure and the stoppages of each vessel. No vessel can enter the canal unless the permission of the captain of the port has been received. By day a blue flag, and by night a white light, signify that the passage is clear. A red flag, or two white lights, signify that the passage is not clear.

6. All vessels preparatory to entering the canal must have their yards braced up and their boats swung inboard. In addition to two bow anchors, a kedge with a hawser bent to it, strong enough to hold the vessel, must be carried at the stern, ready for letting go.

7. Vessels having the necessary lighting apparatus may navigate the canal by night.

8. In the event of grounding, the canal authorities have the right to direct all operations for floating the vessel, and, if necessary, to unload and tow her at the expense of the vessel. The cost of floating, discharging, towing, and reloading must be paid before the departure of the vessel.

9. The following actions are prohibited in the canal:—Anchoring a

Greece—Corinth Canal (*continued*).

vessel, except under unavoidable circumstances. Throwing overboard cinders, ashes, or material of any kind. Firing guns on board the vessels.

10. The net tonnage, resulting from the system of measurement laid down by the International Commission of Constantinople, and inscribed on the vessel's official papers, is the basis for levying the navigation due, which at present is as follows:—

For vessels sailing to or from the Adriatic—

Mail steamers, yachts, and war vessels from 1 to 199 tons,	75 c. per ton ;	other vessels,	50 c.
" " " 200 to 499 tons,	65 c. per ton ;	" "	50 c.
" " " 500 to 799 tons,	50 c. per ton ;	" "	50 c.
" " " 800 and above,	40 c. per ton ;	" "	40 c.

For vessels sailing to or from the rest of the Mediterranean—

Mail steamers, yachts, and war vessels from 1 to 199 tons,	65 c. per ton ;	other vessels,	35 c.
" " " 200 to 499 tons,	55 c. per ton ;	" "	35 c.
" " " 500 to 799 tons,	35 c. per ton ;	" "	35 c.
" " " 800 and above,	25 c. per ton ;	" "	25 c.

If seven mail steamers, or steamers that habitually carry passengers, belonging to the same owner, pass through the canal in a week, performing a regular service, a reduction of 25 per cent. is made on the above dues.

11. The following pay no transit dues:—

Hellenic vessels of war, except vessels assimilated to them by special conventions. Fishing and other boats under the Hellenic flag, whose tonnage does not exceed three tons.

12. The charge for towage in the canal by the society is fixed as follows:—

Net tonnage from	4 to 10 tons,	5 francs per vessel.
" "	11 to 20 tons,	10 " "
" "	21 to 50 tons,	15 " "
" "	51 to 150 tons,	25 " "
" "	151 to 500 tons,	50 " "
" "	501 tons and above,	10 centimes per ton.

Steamers of 800 tons and more pay no charge for towage.

13. All vessels towed must furnish their own tow-rope. Steam vessels must use their own propelling power, or keep it in readiness for assisting the tug. Vessels may be towed by tugs not belonging to the Canal Society. Such tugs must pay the dues to which ordinary vessels passing through the canal are subject, except when going through the canal to meet vessels of their owner which they intend towing, or when returning to their usual berth after having towed a vessel through, when they shall not be subject to payment of the dues.

14. The Canal Society accepts, in payment, drafts at sight drawn by masters on their owners, and accepted by the society. Payment in cash at the entry of the canal must be in gold coins of the type of coins of the Latin Union, or in sterling pounds, at the fixed rate of exchange of 25 francs ; or in coins of 20 marks at the fixed rate of exchange of 24·70 francs ; or in Turkish pounds at the fixed rate of exchange of 22·75 francs ; or in Egyptian pounds at the fixed rate of exchange of 25·75 francs. Silver coins, such as are legal tender in Greece, are accepted in payment as odd money up to 10 francs.

D'HASKALIO.

D'haskalio is 7 miles N. of Agastira, and has room for only one vessel at a time.

Export.—Iron ore.

Greece.**DRAGAMESTI.**

Dragamesti, or Astoko, is in lat. $38^{\circ}33'$ N., long. $21^{\circ}5'$ E.

Population.—1,800.

Exports.—Valonea and wool.

Accommodation.—The anchorage is in 9 to 11 fathoms close to the town of Astoko. The harbour is safe, but vessels can only load at the rate of 12 tons per day, a fact which should not be lost sight of by shipmasters when drawing up charter-parties for this port. Vessels are usually chartered for Dragamesti or Pandelein, which are considered as one port, at Patras or Zante, and it is usual to take an interpreter from one of these places, who, in addition to interpreting, works as a labourer at a pay of 4 drachmai per day with food. Ballast is thrown overboard. Fresh meat of good quality may be obtained at low rates.

Port Charges.—Anchorage, Light, and Health Dues.—See Greece.

ERGASTERIA.

(See **Agastira**, p. 273.)

EURIPO STRAITS.

(See **Chalkis and Euripo Straits**, p. 276.)

GALATAKI.

(See **Port St. George**, p. 284.)

GYTHIUM.

(See **Marathonisi**, p. 282.)

KATAKOLO.

Katakolo is in lat. $37^{\circ}40'$ N., long. $21^{\circ}18'$ E.

Exports.—Currants, raisins, and wine.

Accommodation.—There is 33 ft. of water at the head, and along the inner side of the outer arm of the mole. Vessels lie stern-on to the mole, with two anchors out ahead, quite safe, and well sheltered.

British vessels generally come here in ballast and load currants.

Provisions, etc., have to be brought from Pyrgos, about 7 miles distant. Water is scarce.

Port Charges.—**Stevedore**:—Loading and stowing currants, 5 dols. per 100,000 lb. **Labour**:—3s. 6d. per day. **Discharging Ballast**:—By lighters, 1s. per ton. **Port and Light Dues.**—See Greece.

KERVASARA.

Kervasara Bay, in lat. $38^{\circ}51'$ N., long. $21^{\circ}11'$ E., lies at the S.E. extremity of the Gulf of Arta.

Population.—1,800 (Town).

Imports.—Coffee, sugar, and manufactured goods.

Exports.—Valonea, wool, olives, cattle, cheese, and butter.

Accommodation.—There is a good anchorage close to the town in 4 to 15 fathoms. The port is open to W. winds.

Pilotage:—On a vessel of 126 reg. tons from Prevesa and back, £1 6s.

Port, Health, and Light Dues.—See Greece.

Greece.

KIMASSI, PORT PELAKI.

Port Pelaki is in lat. $38^{\circ}50'$ N., long. $23^{\circ}30'$ E.

Export.—Whetstone.

Accommodation.—There is deep water, but the anchorage is dangerous in bad weather. On a calm day 200 to 300 tons can be loaded.

KIMOLOS ISLAND.

Kimolos Island is in lat. $36^{\circ}48'$ N., long. $24^{\circ}35'$ E.

Population.—2,015.

Exports.—Manganese and iron ore, lead, zinc, kaoline, fuller's earth, and soft stone for building.

LAURIUM.

(See *Agastira, or Ergasteria*, p. 273).

Laurium, or Laurion, is in lat. $37^{\circ}43'$ N., long. $24^{\circ}2'$ E.

Population.—10,000.

Imports.—Coal and coke.

Exports.—Lead and other minerals.

Accommodation.—Laurium has a good harbour, in which the shipping is protected from nearly all winds. There are no tides.

Pilotage.—Optional. If engaged, £7 10s. in and out, including boat hire and mooring.

Port Charges.—**Anchorage and Light Dues.**—See *Greece*. **Boat Hire:**—By agreement. **Consular Fees:**—2s. 6d. **Labour:**—5 drachmai per day. **Brokerage:**—£5 5s. **Quarantine and Disinfection Dues:**—These are very high, and although the fact has been brought to the notice of the authorities, no remedial measures have so far (1908) been taken.

LEPANTO.

Lepanto, in lat. $38^{\circ}24'$ N., long. $21^{\circ}49'$ E., lies on the north shore of the gulf of the same name.

Population.—About 4,000.

Accommodation.—The harbour is shallow, having only about 5 ft. of water, but there is good and well protected anchorage in six fathoms within a quarter of a mile of the shore.

LIMIONA BAY.

Limiona Bay is at the entrance to Euripo Channel, about 40 miles from Agastira, and near to Marathon. It is not marked on the majority of charts. Vessels have to call at Agastira for clearance and port documents, both going and returning.

Accommodation.—There is a jetty with 24 ft. of water alongside, where hematite iron ore is loaded at the rate of 800 to 1,200 tons per day. There is deep water in the bay and strong mooring buoys are provided. Strong northerly winds prevail.

Pilotage.—£8 10s., but masters usually try and fix a lower rate before accepting a pilot. Pilot attending on board till loading is finished, 10s. per day.

Greece—Limiona Bay (*continued*).

Pro Forma Charges on a steamer of 2,012 reg. tons, loading ore at Limiona Bay:—

	£	s.	d.
Health and light dues, manifest, stamps, and gratuities	32	12	2
Consular fees	0	12	6
Pilotage in and out	8	0	0
Boat for mooring and unmooring	3	0	0
Guard on board, 11 days at 10s. per day	5	10	0
Doctor's inspection	0	10	0
Provisions	19	3	6
Loading 4,850 tons of ore at 10 <i>d.</i> per ton	202	1	8
Dispatch, 4 days at £6 per day	24	0	0
Telegrams and postage	1	10	2
Agency	5	5	0
	302	5	0
Interest and insurance at 3 per cent.	9	1	0
	£311	6	0

MARATHONISI, OR GYTHIUM.

Marathonisi, in lat. $36^{\circ}46'$ N., long. $22^{\circ}35'$ E., lies in the Gulf of Kolokythia. It has now resumed its ancient name of Gythium.

Population.—2,000.

Accommodation.—The anchorage is in 15 fathoms, with mud bottom, about 3 cables from the shore. There is a weekly steamer from here to Athens.

MILO ISLAND.

Milo Island is in lat. $36^{\circ}42'$ N., long. $24^{\circ}25'$ E.

Population.—5,393.

Exports.—Manganese ore, sulphur, salt, gypsum, and millstones.

Accommodation.—The harbour is a good one, but dispatch is slow.

MISSOLONGHI.

Missolonghi, or Mesolongian, in lat. $38^{\circ}24'$ N., long. $21^{\circ}27'$ E., lies on the N. shore of the Gulf of Patras, 22 miles W. of Lepanto.

Population.—9,000.

Exports.—Valonea, maize, tobacco, currants, wool, and cotton.

Accommodation.—The anchorage is about 4 miles in a straight line from the town. Vessels of 200 tons and over generally anchor about a quarter of a mile E. of the lighthouse on the island of St. Sosti, in 4 to 5 fathoms of water and distant from Missolonghi about 7 miles. Immediately after anchoring, captains must present their papers to the Custom House. Ballast may be thrown overboard. Quarantine is no longer performed here. Vessels bound to the Ionian Islands, or the west coast of Greece, must ride out their quarantine (if any) at Corfu or Trezoni (an uninhabited island in the Gulf of Lepanto). Provisions are difficult to obtain, mutton being the only fresh meat that can be procured.

Pilotage.—None.

Port Charges.—**Anchorage, Light, and Health Dues.**—See **Greece.**
Water:—2*d.* per barrel of 50 lb.

Greece.

MYTICA.

Mytica, in lat. $38^{\circ}41'$ N., long. $20^{\circ}56'$ E., is a small village opposite the island of Kalomo, about 8 miles S.E. of Zaverda.

Exports.—Cattle, valonea, wool, cheese, and butter.

Accommodation.—Anchorage is in a small bay, in 8 to 10 fathoms, open to winds from the S.W.

NAUPLIA.

Nauplia is in lat. $37^{\circ}35'$ N., long. $22^{\circ}49'$ E.

Population.—6,000.

Exports.—Tobacco, currants, honey, cheese, sponges, vermilion, carmine, and spirits of wine.

Accommodation.—The anchorage is good. Small vessels can anchor between the island of Bourgi and the town, in 15 ft. of water, about 5 cables off. Good fresh water can be had.

NAVARINO.

Navarino (Neo-Kastro) is in lat. $36^{\circ}55'$ N., long. $21^{\circ}42'$ E.

Population.—3,800.

Accommodation.—The harbour is good. Anchorage is in 10 fathoms about 5 cables north of the town; small vessels anchor closer in off the mole.

Port and Light Dues.—See Greece.

NAXOS ISLAND.

Naxia (or Porto Saline), the capital, is on the W. side of the island, in lat. $37^{\circ}3'$ N., long. $25^{\circ}30'$ E.

Population.—Island, 16,694. Town, about 3,000.

Exports.—Fruit, wine, cheese, olives, oil, citrons in brine, and emery stone.

Accommodation.—The outer anchorage, which is exposed to winds from the N. and N.W., is in 6 fathoms of water, sand and weedy bottom, about half a mile from the town. The water shoals gradually to 9 ft. close to the shore.

A mole, 500 metres (1,639 ft.) in length is now in course of construction.

PATRAS.

Patras, in lat. $38^{\circ}13'$ N., long. $21^{\circ}45'$ E., stands on the eastern shore of the gulf of the same name. Distance by sea from Liverpool, 2,560 miles.

Population.—37,725.

Exports.—Currants, valonea, tobacco, figs, resin, wine, lithographic stones, and liquorice.

Accommodation.—The port is formed by two moles about $2\frac{1}{2}$ cables apart, and a breakwater almost at right angles to them, nearly 5 cables long, running N.E. and S.W., distant from the ends of the moles more than half a cable, thus forming two openings. On each end of the breakwater there is a red light, and at the end of the northern, or San

Greece—Patras (*continued*).

Nicolas mole, is the lighthouse with flashing white light, visible in clear weather 12 miles. Vessels drawing 22 ft. can enter this port.

Pilotage.—Compulsory; £1 for steamers, and 10s. for sailing vessels.

Port Charges.—**Anchorage, Light, and Health Dues:**—See **Greece**.
Brokerage and Commission:—5 per cent. **Entering and Clearing:**—Steamers £2 2s.; sailing vessels, £1 1s.; manifest, 4s.; doctor's fee, 10s.; interpreter, 5s.; guardian, 2s.; harbour-master, 8s.; merchant's commission 2½ per cent. **Water:**—1s. 6d. per 60 gallon cask. **Provisions:**—Bread 2d. per lb.; beef, 6d. per lb. **Stowage:**—Currants in cases, including labour, about 2s. per ton; in barrels, 1s. 6d. per ton; in bags, 1s. per ton.

PIRÆUS.

Piræus is in lat. 37°58' N., long. 23°40' E.

Population.—71,505.

Imports.—Coal, cattle, iron, machinery, glass, hardware, rice, cotton and woollen goods, petroleum, cordage, deals, fish, etc.

Exports.—Sponges, tobacco, oil, honey, wine, mineral ores, lead, dried fruits, valonea, soap, hides, cocoons, etc.

Accommodation.—The port is well protected by nature, and capable of accommodating vessels not drawing over 26 ft. Merchant vessels are usually moored to the stone quays, 1½ miles long, but discharge into lighters. The town is clean and healthy. There is a maritime railway (Basiliades) with a cradle 340 ft. long, 65 ft. wide, and with a lifting power of 3,500 tons. The dry docks are still under construction. There are two movable cranes on the quay, to lift 1½ to 2 tons each.

Pilotage.—Optional. There is no difficulty in making the port during the day. Strangers should not attempt the entrance by night, as steamers frequently leave after dark, and, the entrance being narrow, collision might occur. Pilots can be obtained if required, and they will be found useful in taking the vessel to a berth.

Port Charges.—**Light and Harbour Dues:**—See **Greece**. **Mooring:**—10s. Sanitary charges, 2 lepta per ton reg. **Labourers:**—6 to 8 drachmas per day. **Lighters,** 6 to 10 drachmai per day, according to size. **Water:**—2s. to 2s. 6d. per ton. **Clearance:**—Steamers, £1. **Agency:**—Steamer with cargo, £5 5s. **Stevedores:**—Discharging coal, coke, fuel, or bricks 11d. per ton; general cargo, from 1 to 3 fr. Steamers often discharge during the summer months, more than 500 tons of coal in a day; for this quick dispatch, £6 to £8 per day is paid. **Translation of Manifest and Stamps:**—10s. **Reporting and Clearing:**—20s.

PORT PELAKI.

(See **Kimassi, Port Pelaki**, p. 280.)

PORT ST. GEORGE, OR GALATAKI.

Galataki is in lat. 38°49' N., long. 23°15' E.

Export.—Whetstone.

Accommodation.—The anchorage is good, but the dispatch is slow.

Greece.

PORT TURKO.

Port Turko, or Turko Liman, is about $2\frac{1}{2}$ miles N. of Agastira. The anchorage is in 5 fathoms, but is not considered safe in winter. Only one vessel can lie here at a time.

ST. NICHOLAS.

(See **Vrisaki Bay**, p. 289.)

ST. THEODOROS.

St. Theodoros is in lat. $37^{\circ}55'$ N., long. $23^{\circ}9'$ E.

Export.—Whetstone.

Accommodation.—There is a good anchorage in deep water, but dispatch is slow.

SANTA MAURA.

Santa Maura, on the island of the same name, is in lat. $38^{\circ}40'$ N. long. $20^{\circ}40'$ E.

Population.—6,000.

Exports.—Wine, olive oil, dry currants and grapes, valonea, and wool.

Accommodation.—The anchorage in the roadstead is in 5 to 8 fathoms, with a sandy bottom. Vessels drawing up to 15 ft. can shelter safely inside the mole at the entrance to the canal which connects the port with the town of Amaxichi, about a mile inland. This canal also connects with the port of Alexander, on the S.E. side of the island, and is used by small steamers eastward bound, who thus avoid going round the island. Santa Maura is unhealthy during the summer months.

Port Charges.—Anchorage, 10 c. per ton; 13 c. if the canal route is made use of. **Light and Health Dues.**—See **Greece**. **Water** :—1s. per 100 gallons.

SANTORIN.

Santorin Island, in lat. $36^{\circ}23'$ N., long. $25^{\circ}29'$ E., is the most southerly of the Cyclades Islands. Thera is the principal seaport of the island.

Population.—Of Island, 15,000.

Imports.—Flour, dried fish, oil, coffee, sugar, woollen and silk stuffs, colonial produce, wood, etc.

Exports.—Wine and brandy, staves, hoops, beans, volcanic cement, tomato paste, pumice stone, etc.

Accommodation.—Small vessels, such as are usually employed, make fast to the shore in 4 fathoms of water.

Port Charges.—**Pilotage** :—Steamers and sailing vessels, 20 c. per reg. ton. **Mooring** :—5 c. per reg. ton. **Wharfage** :—20 c. per reg. ton. **Entrance Fees** :—50 c. per reg. ton. **Clearance Fees** :—2 c. per reg. ton. **Consular Fees** :—£1 2s. 6d. **Labour** :—5 fr. per day. **Brokerage** :—5 per cent.

SERIPHOS ISLAND.

Seriphos Island is in lat. $37^{\circ}10'$ N., long. $24^{\circ}30'$ E.

Population.—4,024.

Greece—Seriphos Island (*continued*).**Export.**—Iron ore.**Accommodation.**—There is a good harbour, but slow dispatch**SKYROS ISLAND.**

Skyros Island is in lat. $38^{\circ}50'$ N., long. $24^{\circ}35'$ E., and is about 25 miles N.E. of Eubœa. The harbour is in Atsitsa Bay, where there is a jetty having a depth of 24 ft. alongside. Pilots for Skyros are taken at Limiona Bay.

Pro Forma Charges on a steamer of 1,804 reg. tons, loading iron ore at Atsitsa Bay :—

	£	s.	d.
Harbour dues	31	0	10
Pilotage in and out	8	10	0
Boat for mooring	2	10	0
Telegrams and postage	1	5	0
Loading iron ore, 4,600 tons at 10 <i>d.</i> per ton	191	13	4
Pilot's attendance	5	0	0
Watchman	2	0	0
Cash to captain	19	4	7
Dispatch, two days	12	0	0
¹ Agency	7	7	0
	<hr/>		
	280	10	9
Interest and insurance at 3 per cent.	8	8	4
	<hr/>		
	£288	19	1

¹ The usual agency fee is £5 5*s.*, but in the case of the steamer for which the account is given above the sum of £7 7*s.* was specially granted in the charter party.

SUNIUM BAY.

Sunium Bay is in lat. $37^{\circ}38'$ N., long. $24^{\circ}2'$ E.

Export.—Zinc ore.

Accommodation.—Sunium Bay is an open roadstead, the shelter not being very good. A strong wind from Sunium will compel a steamer to shelter at Agastira, and E. winds prevent loading; but it is well protected from N. winds.

Port Charges.—Same as Agastira.**SYRA.**

Syra, in lat. $37^{\circ}26'$ N., long. $24^{\circ}55'$ E., is the chief island of the Cyclades, lying off the south coast of Greece.

Population.—27,350.

Imports.—Colonial and manufactured goods, coal, cotton, wool, hides, flour, wheat, and charcoal.

Exports.—Emery stone, citrons in brine, leather, yarns, cotton goods, and vegetables.

Accommodation.—The harbour, lying on the E. coast of the island, possesses a safe anchorage in 17 to 20 fathoms, gradually shoaling to 7 fathoms near the breakwater. The upper part of the harbour near the town has been dredged to a uniform depth of 22 to 25 ft. close to the quays, so that large vessels can now moor stern-on with safety. The harbour is protected by a breakwater 1,135 ft. long, behind which steamers should in any case anchor, especially during the period when northerly winds prevail,

Greece—Syra (*continued*).

as by lying here they ensure quick dispatch. This breakwater is being extended to 1,300 ft., and when completed will give shelter from all winds. During heavy gales from the N. and N.E., large vessels will find excellent shelter under the lee of Gaidaro lighthouse island. Repairs can be executed at the Forges et Chantiers de Syra, where there is a patent slip with a lifting power of 1,200 tons; this slip can be made to lift 1,700 tons. There is a fixed charge for the use of the slip. Syra is in telegraphic communication with all parts of the world; the charge for a telegram to England being 72 leptas per word. The town is clean and healthy. There is a good hospital belonging to the municipality of Hermopolis, which is kept up by voluntary contributions and is free to all nationalities. Another hospital, under the care of the French Sisters of Mercy, has been established in the upper town, and is free to all.

Metallic currency, except in copper, is scarce. Greek bank-notes of 100, 25, 10, 5, 2, and 1 drachmai, which circulate freely at a discount of 12 per cent. compared with gold, afford facilities for commercial undertakings.

Pilotage.—Optional. Vessels requiring a pilot must slow down off the port and hoist the usual signal. The charge for piloting a vessel of any tonnage with a full cargo into the harbour and out is £1 10s. This charge includes the use of a boat for mooring and unmooring.

Port Charges.—**Light Dues** :—50 c. per reg. ton for discharging or loading. **Health Dues** :—2 c. per reg. ton. When less than $\frac{1}{2}$ of the reg. tonnage is either discharged or loaded, only 35 c. are paid for light dues and 2 c. for sanitary dues. Vessels of over 1,000 tons pay for the extra tonnage 25 c. per reg. ton for light dues. Vessels calling for bunker coal or provisions pay only £2 10s., including pilotage dues, brokerage, etc. Vessels coming from any port and leaving for a foreign port without discharging or loading any cargo pay only 2 c. per reg. ton for health dues. Vessels calling on account of stress of weather or by *force majeure*, and which remain longer than 72 hours, have to pay 35 c. per reg. ton for light dues and 2 c. for health dues. **Labour** :—From 2s. 9d. to 3s. 6d. per day; from 6 p.m. to midnight, the same rate. If working all night, double charge. **Stevedore** :—10s. 6d. per day; discharging coal, 11d. per ton. **Ballast** :—About £15 per 100 tons f.o.b. **Brokerage** :—Including attendance, translation of documents, etc., £5 5s. **Quarantine** :—The regulations are very strict, particularly in time of cholera or other infectious diseases. Vessels bound for Greek ports should be careful to have their bill of health visé by the Greek Consul at the port they sail from, in order to avoid being put in quarantine for four days. Masters of vessels are warned by the local authorities that they must conform strictly to the quarantine regulations in force and thereby avoid possible inconvenience and difficulties. Vessels arriving from infected ports are required to heave-to about a mile off the harbour, with the quarantine flag flying at the fore, when a boat will go off, and indicate where she is to perform quarantine, which is for a period of from 5 to 11 days, according to circumstances. The cholera lazaretto for the port of Syra is on the island of Delos, 15 miles to the N.E. of Syra, near the island of Mykonos, where there is good anchorage. Quarantine dues are as follows: 1 c. per reg. ton per day. Doctor's fees, 6 fr.; health guardian, about 1s. 6d. per day and keep.

Greece—Syra (continued).

Water.—Rain water is collected in cisterns, and is very scarce. Good water may be obtained from springs about three miles distant from the town, but at considerable expense. Vessels may be supplied with well-water (rather brackish during the summer months) at 4s. per ton, but it is advisable to avoid taking any if possible.

Pro Forma Charges on a steamer of 1,200 tons register, with a cargo of 2,500 tons of Welsh coal :—

	£	s.	d.
Pilotage, in and out, including a boat for mooring and unmooring	1	10	0
Discharging cargo at 11d. per ton, including shoots, shovels, and baskets	114	11	8
Light dues on taxable, 1,100 tons at 50 c. per ton	22	0	0
Health dues at 2 cents (paper money)	0	12	0
Ship's and provisions manifests	1	0	0
Gratuities to officials, and stamps	1	4	0
Consular endorsement of ship's articles	0	2	6
Visé of Turkish Consul (if ship bound to a Turkish port) on bill of health	0	9	6
Boat attending on ship at 4s. per day (5 days)	1	0	0
Watchman at 4s. per night (5 nights)	1	0	0
Brokerage	5	5	0
	£148	14	8

VATHONDA.

Vathonda, in lat. 38°26' N., long. 23°37' E., is on the W. side of the island of Eubœa, about 5 miles N. of Chalkis.

This port is dangerous and is only frequented by fishing boats.

VIVO PORT.

This port has been opened in the new mining district of Locris, in the vice-consulate of Laurium, and 300,000 tons of iron ore are shipped per annum from it. The harbour is very commodious, there being three jetties available, thus allowing for good dispatch. The port is rendered somewhat dangerous by gales from the E. Most vessels, before calling for cargo, touch at Agastira.

Pilotage and Port Charges are very heavy.

VOLO.

Volo is in lat. 39°24' N., long. 22°59' E. It is the seaport of Thessaly and more directly of Larissa, an inland town about 30 miles distant.

Population.—About 25,000 ; including the district, 78,164.

Imports.—Iron, tin, coffee, refined sugar, spice, rice, leather, paper, cotton and woollen goods, earthen and glass ware, and cutlery.

Exports.—Wheat, barley, rye, Indian corn, sesame seed, wool, silk, tobacco, cotton, olive oil, hides, etc.

Accommodation.—The harbour is safe and well sheltered. Good anchorage in 5 to 12 fathoms. Large vessels should not anchor in less than 8 fathoms. There is a railway pier at present 1,100 ft. long, but an extension of about 350 ft. is now in course of construction. There will be a depth of 25 ft. at its head, thus enabling steamers to come alongside and discharge their cargoes direct into wagons, instead of in lighters. There is also a breakwater under construction, and vessels must take care, when entering, to pass outside the breakwater head, leaving a green light to the right.

Greece—Volo (continued).

The breakwater is well buoyed. Ballast must be discharged outside the harbour. Unless special permission be obtained, all goods must be loaded and discharged at the Custom House pier. All ships on arrival must hoist the yellow flag, and send a boat with their papers to the health office pier, at the end of the harbour. If with clean bills of health, and no sickness on board, such as plague, cholera, etc., free pratique is immediately granted. In rare cases, and by superior order, vessels have been allowed to perform quarantine in the harbour. Every merchant ship should be provided with a bill of health, which is delivered at the quarantine office on arriving and receiving pratique. Merchant vessels of 200 tons and upwards arriving without bills of health are liable to a penalty. Loading and discharging is partly carried on by lighters. Good provisions are usually obtainable.

Pilotage.—Pilots can be obtained, but pilotage is not compulsory.

Port Charges.—**Loading and Discharging** for packages varies from 4*d.* to 10*d.* each. **Goods in Bulk** :—According to agreement. **Weighing Goods** :—About 4*d.* per ton. **Interpreter's Fees** :—2*s.* to 4*s.* per day. **Light Dues, Mole Dues, etc.** :—See Greece. **Labour** :—2*s.* 3*d.* to 2*s.* 10*d.* per man per day. **Commission on Collecting Freight** :—2 to 3 per cent. **Brokerage** :—1 per cent.

VONITZA.

Vonitza, in lat. 38°52' N., long. 20°53' E., lies on the S. shore of the Gulf of Arta.

Population.—3,500.

Exports.—Wool, cheese, and olive oil.

Accommodation.—The anchorage is in 4 to 6 fathoms, close to the town, but owing to the bar at Prevesa Strait (the entrance to the Gulf of Arta), Vonitza is not visited by vessels drawing more than 12 ft. The Custom House is at Kervasara, so that vessels proceeding up the Gulf are not obliged to stop at Vonitza, as was formerly the case.

VOSTIZZA.

Vostizza, in lat. 38°15' N., long. 22°0' E., is on the S. side of the Gulf of Corinth, about 22 miles from Patras.

Population.—10,000.

Accommodation.—The anchorage in the bay is not particularly good, the water being deep and the bottom shelving, and it is well to make fast by a hawser to the mole or sea wall, to prevent dragging.

Water.—Plentiful and good, from fountains close to the beach.

VRISAKI BAY (ST. NICHOLAS).

Vrisaki Bay is in lat. 37°44' N., long. 24°4' E.

Accommodation.—There is only accommodation at this port for one steamer at a time, although the depth of water in the bay is sufficient for any sized vessel. From the N. shore there is an iron jetty, with 22½ ft. alongside, from which iron ore is loaded. It is only about two or three times in the course of a year during very strong gales from the S. that loading is in-

Greece—Vrisaki Bay (St. Nicholas) (continued).

interrupted. On an average 400 and 600 tons per day are shipped, dispatch depending on the stock. Steamers coming here should call at Agastira for pratique and submission of stores manifest. Clearance and disbursements are settled at Agastira.

Expenses are the same as at Agastira, except the pilot's attendance on board, which costs 10s. per day.

ZANTE.

Zante, in lat. $37^{\circ}46'$ N., long. $20^{\circ}54'$ E., is on the E. coast of the island of the same name.

Population.—Town, 15,781, district, 26,721; total, 42,502.

Exports.—Currants, olive oil, green oil, soap, and wine.

Accommodation.—The anchorage near the mole head is in 6 to 7 fathoms, open to the N. to S.E. by S. There is a pier 1,600 ft. long, the depth at the end being 23 to 26 ft. Inside the pier, however, the water gradually shallows to the shore, and near the quays there is only 10 ft. Some part of the quays is available for small vessels and lighters, but this space is being gradually reduced by silting. There is no bar, but the depths of water are variable. There are no cranes. Small repairs can be executed.

Port Charges.—Anchorage, Light, and Health Dues.—See Greece.
Boat Hire and Attendance:—£1. **Custom House Papers (stamped):**—5s.
Harbour Master's Fee:—10s. **Sanitary Guards:**—8s. 8d. **Custom House officials,** 8s. 8d. **Health Officer:**—6s. **Stowage:**—Currants, 1s. per ton gross; olive oil, 1s. 6d. per ton. **Entering and Clearing:**—£2 2s. **Bill of Health (if required):**—10s.

ZAVERDA.

Zaverda, in lat. $38^{\circ}47'$ N., long. $20^{\circ}55'$ E., is a small town opposite the island of St. Maura.

Population.—About 1,100.

Exports.—Cattle, valonea, wool, cheese, and butter.

Accommodation.—Anchorage is in 6 to 12 fathoms on a mud bottom, about a quarter of a mile from the town. It is only sheltered from S.E. to N.W. winds.

ZEa ISLAND.

The island of Zea is in lat. $37^{\circ}35'$ N., long. $24^{\circ}20'$ E.

Population.—3,817.

Imports.—Welsh coal, flour, sugar, rice, salt fish, coffee, oil, cotton and woollen goods, and yarns.

Exports.—Barley, valonea, cattle, wine, almonds, hides, vegetables and honey.

Accommodation.—The port is a safe one, the anchorage having a depth of from 12 to 17 fathoms. The wharfage is only available for small sailing vessels. There are no railways on the island, which has connection by sailing ships with the Ergasteria-Athens railway, and by steamer twice a week to Piræus and Syra. There are no tugs.

Greece—Zea Island (continued).

Pilotage.—Optional. If taken the charge is £4 sterling, including mooring.

Port Charges.—Entrance fees, 2 lepta per ton. **Boat Hire** :—4s. to 5s. per day in the harbour. **Consular Fees** :—2s. 6d. for endorsement of articles, 10s. for bill of health. **Sand Ballast** :—3s. 6d. per ton. **Labour** :—Plentiful except in harvest season (May and June). **Water** :—Good fresh water can be had at 3s. 6d. per ton. **Provisions** :—Good. Fresh meat, vegetables, fruit, bread, etc.

Pro Forma Charges on a steamer of 1,683 tons register, with a cargo of 3,423 tons in, and ballast out, drawing 19½ ft. loaded.

	£	s.	d.
Sanitary dues 2 lepta per reg. ton; harbour dues and light dues			
50 lepta per reg. ton, total 875·16 drachmai=	32	4	0
Pilotage, in and out, mooring and unmooring	4	0	0
Boat hire	1	5	0
Greece bill of health	0	10	0
Doctor's fee and medical inspection	1	0	0
Translation of manifest	0	10	0
Gratuities to Custom House officials	1	10	0
British consular fee, etc.	0	12	6
Agency fee	5	5	0
	£46	16	6

ZEITOUN.

Zeitoun is in lat. 38°51' N., long. 22°50' E.

Population.—11,000.

Accommodation.—Zeitoun is situated at the head of the gulf of the same name, which forms a continuation of the Talanta Channel, dividing Eubœa Island, or Negropont, from the mainland. There is good anchorage in about 3 fathoms of water, three miles off shore. An iron wharf extends 460 ft. from Agia Marina, on which are steam cranes. The town of Zeitoun is about four miles inland.

HOLLAND.

Holland is a small kingdom situated on the western seaboard of Europe, having a total area of 12,648 square miles, and a population of 5,747,269. The coast-line is extensive and varied, but low lying everywhere.

Commerce.—Holland is a free-trading country. A few specific and *ad valorem* duties are levied, but they have only a fiscal, not a protectionist, character. The “most favoured nation” treatment is accorded Great Britain in terms of Treaties of Commerce and Navigation between the two countries, the dues and charges on British vessels in the ports of Holland being the same as on those belonging to the kingdom of the Netherlands, and vice versa. Much of the trade of the country is an entrepôt trade, the ports of Rotterdam and Amsterdam serving largely as inlets and outlets for German and Mid-European trade.

Mercantile Marine.—The commercial navy of Holland has a total tonnage of 448,164 tons, of which 398,604 tons is steam, and 49,560 tons sail.

Internal Communication.—Canals intersect the land in all directions, and these, and the navigable rivers with which they connect, constitute the leading feature in the inland communication, providing as they do 2,700 miles of waterway, linking every centre of industry with the ports. The railways, 1,895 miles long, have a gauge of 4 ft. 11 in. They are all owned and worked by private companies. The Government have established an excellent post, telegraph, and telephone service, and in addition there are a few private telegraph and telephone companies.

Currency, Weights and Measures.—Holland has a gold standard, the standard coin being the ten florin piece. The unit of the silver coinage is the guilder or florin of 100 cents, 1s. 8d. ; or 12 florins=£1. The French metrical system of weights and measures is used throughout the country, and, with trifling changes, the same names are used.

At Amsterdam the common ton is 1,015 kilos. = 2,240 English lb.

The following are reckoned as one last in settling ships' freights :—8 hogsheads (or oxhofts) of wine ; 12 barrels of pitch ; 13 barrels of tar ; 20 chests of lemons, etc. ; 2,000 kilos. of iron, copper, and colonial produce ; 2,000 kilos. of almonds ; 1,000 kilos. of wool or feathers. A last of wheat is 2,400 kilos. ; one of rye, 2,100 kilos. ; and the latter 20½ per cent. higher than oats, and 12 per cent. higher than seed. A last of ballast=2,000 lb. The last for freight is 2,000 kilogrammes, or about 1 ton 19 cwts. 1 qr. 18 lb. avoirdupois.

Rotterdam last of wool=2,000 lb.

Port Regulations.—The following regulations must be observed in all the ports of Holland :—

On entering harbour, the masters must haul in their jib-booms and flying jib-booms ; they are responsible for all damage arising from neglect, besides the penalty to which they are liable. On leaving harbour it is allowed to

Holland.

carry jib-booms and flying jib-booms, but they are responsible for all damage it may occasion to others.

Ships, on entering or leaving the ports, must hoist their national flag; it is forbidden to merchant ships to hoist a pennant or broad pennant in the harbour, under any pretext whatever.

Masters of ships must, under a penalty of five hundred guilders, immediately after their arrival, give notice to the harbour master of the quantity of gunpowder on board, either for their own use or for trade. On the first demand of the harbour master, masters of ships and vessels must deliver up their gunpowder, in order to be deposited under military conveyance in the Royal Magazine. When leaving port, the harbour master, at the request of the masters of vessels, will deliver up to them again their gunpowder, rockets, etc.

The expenses for unloading or loading such explosives are:—

MILITARY CONVEYANCE.		Fr.	C.
To the non-commissioned officer	. . . . .	0	75
„ „ soldier or mariner	. . . . .	0	50

For each barrel or case containing gunpowder $7\frac{1}{2}$ c. will be charged for magazine expenses. This charge, exclusively in favour of those charged with the transport or storing, must be paid on delivery, and for restitution of the gunpowder, rockets, etc., to the harbour master. Ships or vessels which are not to remain above 48 hours in the harbour, in order to go to sea or to the roads, may be exempted from delivering up their gunpowder and rockets, but are obliged to inform the harbour master of it.

Two or more vessels lying alongside each other, and particularly those of the outer range, must top their lower yards and masts. Unloaded vessels must strike their topgallant and royal yards. If required, the harbour master will make them strike their topmasts.

Masters of vessels lying in the outer range must, by bringing out hawsers or cables, or placing anchors in the deep of the passage, provide due measures to prevent injuries to lighters loading or unloading vessels of the inner range. Besides the penalty incurred in such cases, masters of vessels make compensation for all injury done by them.

No ship or vessel lying in the port is allowed to fire off cannon, guns, pistols, or let off fireworks.

No sand, ashes, or any other materials liable to sink, may be thrown into the water within the harbour. Independently of the penalty incurred for such infraction, the master of the vessel shall, at the order of the harbour master, have them fished up again. In case of refusal, the harbour master will have it done at the expense of the ship.

In case of taking in or discharging ballast, shipping or unshipping of sand, grain, or similar articles in the harbour or docks, masters of vessels must spread a sail from the shore to the deck, or from one vessel to the other.

When vessels are moored with chains, due precautions must be taken not to injure the piles to which they are fastened.

It is not allowed to boil or heat on board ships or vessels anything liable to ignite easily, such as pitch, tar, resin, oil, grease, etc. On the demand of masters of vessels it may be done at the place assigned by the harbour master.

Receipts for payments by masters of vessels of all sums exceeding 10 florins must be on stamped paper.

Holland.

Custom House Rules.—Shipmasters must produce, within 24 hours after arrival, a declaration in writing of their cargoes. Masters of ships bound for Amsterdam or Zaandam have to produce this declaration on arrival at Ymuiden. Food and stores for the crew must be placed in one room, which is sealed up by the Custom House officers. Masters must be particularly careful in seeing that these seals are in no way damaged.

Measurement Certificates.—The laws relating to the payment of tonnage dues in the ports of Holland provide that :—

1. A duly signed certificate of measurement (in metres) is to be given in duplicate to the captain or commander, specifying, besides the flag which the vessel bears, and many other particulars necessary to distinguish the same, her measured length, breadth, depth, and tonnage.

2. No vessels will be allowed to depart, nor will be provided with a direct or indirect certificate of adjustment, until their certificates of measurement shall have been exhibited at the office of the port for discharging or loading, as a proof of which the same will have to be signed there.

3. The certificate of measurement, when thus signed, must be kept on board of the ships clearing outwards under a penalty of 25 fl., and must be exhibited to the searching officers at their request.

Emigration Laws.—Every ship destined for the conveyance of emigrants from any port in Holland must be in a sound condition and fully fitted out and properly manned. If a steamer, the boilers and engines must be thoroughly examined prior to each voyage, and overhauled to the satisfaction of the Emigration Commissioners. In addition to the usual number of boats, every emigrant ship must carry a properly fitted lifeboat; all boats must be at least 6·5 metres long and 2·2 metres wide.

Accommodation.—Every emigrant is to be allowed, unhampered by luggage, a clear superficies of not less than 1·75 sq. metres, with a height of 1·53 metres, or of 1·25 sq. metres, with 1·85 metre or more in height. This accommodation must be well ventilated and lighted and separated from the engine room (in the case of a steamer) by a traversing partition, at a distance of at least one metre. The decks of the space appropriated to the berths of emigrants must be in perfect order and watertight, and of a thickness of at least 0·35 metres. No emigrants are to be berthed between decks or upon the orlop-deck without the written consent of the Emigration Commissioners. The sleeping accommodation to consist of either hammocks or cots. These, which are to be made of sailcloth or strong canvas, must be at least 1·85 metres long, 0·50 metres wide, with an open space of not less than 0·15 metres between the lower deck and the bottom of the lowest tier of berths. Not more than two berths shall be placed one above the other, the bottom of the upper tier to be at one half the distance between the upper deck and the bottom of the lowest tier. The cots are principally intended for females. Double cots or cots for two persons shall only be used by married couples, two females, or two children under the age of 12. Detached cabins are to be provided for the use of male emigrants who have attained the age of 14 years. The bed-clothes are to be kept in good repair and in a cleanly condition and the mattresses filled with fresh dry straw. Each emigrant will attend to the cleanliness of his own bed place and bed-clothes. One w.c. must be provided for every hundred emigrants on board.

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On every emigrant ship there must be provided proper accommodation for the treatment of the sick. In ships authorized to carry 100 emigrants, (two children under the age of 10 years to be reckoned as one person, and under the age of 1 year not to be taken into consideration), this hospital or sick-bay must have a floor space of not less than 8 sq. metres, and a height of not less than 1.53 metres. It must be properly equipped with all necessary medicines and surgical instruments, which shall be subject to examination and approval before the departure of the ship. In ships carrying more than 100 emigrants the hospital accommodation must be proportionately greater. Ships sailing for any port east of the Cape of Good Hope or west of Cape Horn must be provided with a competent medical officer. The duties of this medical officer shall commence previous to the embarkation, at which he shall be present. No emigrant who may be suffering from a dangerously contagious disease shall be received on board any emigrant vessel, and should any such disease manifest itself after embarkation and before the sailing of the vessel, those emigrants who are so suffering must be disembarked.

No merchandise, which, according to the judgment of the Emigration Commissioners, may be injurious to the health, or dangerous to the safety of the emigrants, may be shipped. The conveyance of horses and cattle is prohibited, excepting such cattle as may be required for consumption during the voyage.

Food and Water.—One experienced cook must be engaged to prepare, properly cook, and distribute the food to the emigrants at the times to be fixed by the master. The cook will be assisted in this work by emigrants chosen in turn by the captain. The cook's galley is to be provided with all necessary apparatus, utensils, and fuel, as well as with a pair of scales and the Netherlands weights and measures.

All provisions after having been shipped will be examined by the Emigration Commissioners and must be of a standard quality to meet with their approval, and in sufficient quantities regulated according to the duration of the voyage and the number of emigrants to be conveyed. The probable duration of a voyage shall be calculated as follows:—

- To a port north of the Equator, 10 weeks.
- To a port south of the Equator, La Plata included, 12 weeks.
- To a port south of the Equator farther than La Plata but not rounding either Cape Horn or the Cape of Good Hope, 14 weeks.
- To a port on the further side of either Cape Horn or the Cape of Good Hope, but without re-crossing the Equator, 17 weeks.
- To a port on the further side of either Cape Horn or the Cape of Good Hope when the Equator has to be re-crossed, 21 weeks.

The probable duration of voyages not mentioned above, or of voyages by ships wholly or partially propelled by steam, shall on every occasion be determined by the Emigration Commissioners, and the ship must be found with a sufficient supply of provisions, fuel, etc., in accordance with their decision.

The ship shall carry a supply of drinkable water in casks or iron tanks in the proportion of three litres for each emigrant per day during the probable duration of the voyage, and of this supply $1\frac{1}{2}$ litres per day must be placed at the disposal of each emigrant. Should the ship be provided with a distilling apparatus, the supply of water is to be determined by the Emigration

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Commissioners, who will approve and examine the same, as also the distilling apparatus and the supply of fuel available for the same.

The supply of provisions to be allowed to each emigrant is to be calculated according to the following weekly rations:—

Ships' bread	1.5 kilogram.
Salt meat	0.5 „
Bacon	0.5 „
Coffee	0.12 „
Rice	0.75 „
Groats	0.75 „
Meal	0.5 „
Peas and beans	0.67 „
Potatoes	2.5 „
Salt	as required.
Vinegar	as required.

No alteration in this scale will be allowed without the express sanction of the Emigration Commissioners, who will take into consideration the nourishing properties of any provisions which may be allowed to be substituted. On long voyages the Commissioners have power to require the addition to the above rations of such quantities of pickles, salted cabbage, lime or lemon juice, or the like, which they may deem necessary for the preservation of the health of the emigrants.

The Emigration Commissioners will, in consultation with the medical officer, or with the captain in the absence of such officer, determine what stores and provisions shall be shipped for the nourishment and care of the sick.

Steamers engaged in Regular Service.—The only regulations applicable to steamers engaged in a regular service between a Netherlands port and another European port are those having reference to the embarkation of emigrants suffering from dangerous contagious diseases and to the general fitting out of the vessel. These steamers must be in good condition, properly fitted and manned. They must be provided with the usual number of boats, together with a lifeboat of the size before mentioned. For every emigrant carried there shall be between decks or in the deck cabins a space of not less than 0.75 sq. metre superficies, with a height of not less than 1 metre. The number of emigrants to be carried must be notified to the Emigration Commissioners four hours prior to the sailing of the vessel, and in the case of a vessel sailing after 10 o'clock at night or before 10 o'clock in the morning the notices must be given before 10 o'clock at night.

Immigration Regulations.—These follow the usual code in force amongst Continental nations, and shipowners are in no way affected by the provisions of the law under which the admission and settlement of foreigners in Holland is regulated.

ALKMAAR.

Alkmaar, in lat. 52°38' N., long. 4°43' E., is situated on the Great North Holland Canal, about 20 miles from Amsterdam.

Population.—20,500.

The expenses on a sailing vessel of 400 reg. tons (=1,132 cubic metres) are during summer about £42, inwards loaded, and outwards in ballast; during winter about £46.

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AMSTERDAM.

Amsterdam, the principal commercial town of the Netherlands, in lat. $52^{\circ}22'$ N., long. $4^{\circ}52'$ E., is situated on the S. side of the estuary of the Y, at the mouth of the river Amstel.

Population.—About 565,560.

Imports.—Tobacco, coffee, sugar, spices, petroleum, cotton, tea, copra, indigo, cochineal, wines, brandy, wool, grain, flour, timber, hemp and flax, pitch and tar, iron, hides, linen, cotton and woollen stuffs, hardware, rock salt, tin-plates, coal, dried fish, and margarine.

Exports.—Cheese, butter, clover, rape, hemp and flax seeds, rape and linseed, oils, gin, Dutch linen, cotton goods, refined sugars, flower bulbs, Westphalian coal, coke, and iron.

Accommodation.—Vessels bound for Amsterdam or Zaandam enter the North Sea Canal at Ymuiden. This they can do at all times, day or night, without reference to tides. The canal is open to all vessels drawing up to 30 ft. At night time the direction of the channel in the canal is indicated by a row of electric lights placed on the banks 6 ft. above the water level and at intervals of about 260 yards, these intervals at the bends and along the branch canals leading to the locks being reduced to 109 yards. The harbour at Amsterdam is capacious and secure, the accommodation being such that the largest ships can anchor alongside the quays and warehouses. The length of the canal to the commercial quay is 15 miles, and the depth of water $31\frac{1}{2}$ ft. The large lock is 394 ft. long, 60 ft. wide, $24\frac{1}{2}$ ft. on the sill; the small lock 230 ft. long, 40 ft. wide, 15 ft. on the sill. The new lock is 740 ft. long, 82 ft. wide, 32 ft. 8 in. on the sill. The Y, with the basins for the anchorage of sea-going vessels, contains 360 acres of water area, with a depth of from $31\frac{1}{2}$ ft.; the Y quays and jetties are 2,310 ft. long. The commercial quay and basin has a quayside length of 7,800 ft., with $31\frac{1}{2}$ ft. of water alongside, and is fitted with one crane to lift 30 tons, six to lift 3 tons, and thirty-one travelling cranes, all of which are worked by hydraulic power; there are capstans, a coal tip, 80 ton steam sheers, sheds, and warehouses. The ore quay is 1,640 ft. long, with $31\frac{1}{2}$ ft. of water alongside; there are six hydraulic cranes to lift 3 tons each. The Yharde has a quayside 6,429 ft. long, with $31\frac{1}{2}$ ft. of water alongside, and is fitted with sheds and fifteen electric cranes. The railway basin is 270 ft. wide at the entrance; and the length, partly basin and quayside, is 2,850 ft.; the depth alongside is $26\frac{1}{2}$ ft., there are no locks. The timber docks have a water area of 87 acres; are 66 ft. wide at the entrance, and from 18 to 25 ft. deep; no quayside and no locks. The Entrepôthaven has an area of 35 acres, is 5,036 ft. long, 300 ft. wide, 28 ft. deep, and has a quayside of about 3,700 ft.; there are large warehouses and electric and hydraulic cranes. The Oude Houthaven has an area of 31 acres, is 230 ft. wide at the entrance, 23 to 25 ft. deep; there are no quays or locks, but there is a grain silo 394 ft. by 85 ft., and large warehouses. The petroleum basin has an area of 30 acres, the width of the two entrances being 100 ft. each, and the depth alongside 27 ft. 9 in. Here there are fifteen oil tanks, these having a total capacity of 41,000 tons of oil. The west dock has an area of 27 acres with $17\frac{1}{2}$ ft. on the sill; there are no quays. The east dock has an area of 30 acres, with 19 ft. on the sill; there are no quays. The Nieuwe Vaart has 19 ft. on the lock sill, and

Holland—Amsterdam (*continued*).

3,400 ft. of quayage. There are six floating docks. The Wilhelmina (C. & S. type) is 424 ft. long, 73½ ft. wide at the entrance, 20 ft. on the blocks, with a lifting power of 7,500 tons. The Koninginne is 402 ft. long, 63½ ft. wide at the entrance, 17 ft. on the sill; this dock is in two compartments. The Koning is 402 ft. long in four compartments, 56 ft. wide at the entrance, 18 ft. on the sill. No. 1 is 201 ft. long, 62½ ft. wide at the entrance, 13¼ ft. on the sill. No. 2 is 165 ft. long, 62½ ft. wide at the entrance, 13¼ ft. on the sill. No. 3 is 165 ft. long, 62½ ft. wide at the entrance, and 12½ ft. on the sill. There are extensive engineering works alongside the floating docks, where all repairs can be done. A floating crane of 80 tons lifting capacity is also available.

Amsterdam is one of the safest ports on the Continent, for when once inside the locks a ship is absolutely beyond all danger; there being no rise and fall of tide.

Time Signals.—Chronometers can be checked. Four black circular discs are placed perpendicularly on the public buildings on the commercial quay, 5 minutes before the signal. The discs fall into a horizontal position at noon, Amsterdam mean time, corresponding to 23 h. 40 m. 21 s. Greenwich mean time.

Pilotage charges from Ymuiden to Amsterdam and Zaandam, and from Amsterdam and Zaandam to Ymuiden.

Draught in Decimetres.	SUMMER SERVICE.						WINTER SERVICE.					
	Sailing Vessel.				Steamship.	Sailing Vessel.				Steamship.		
	Sailing.		Being towed.			Sailing.		Being towed.				
	Gl.	c.	Gl.	c.	Gl.	c.	Gl.	c.	Gl.	c.	Gl.	c.
15 and less	4	92	4	62	4	32	5	58	5	22	4	86
16	5	28	4	92	4	56	5	94	5	58	5	22
17	5	58	5	22	4	86	6	30	5	88	5	52
18	5	88	5	52	5	16	6	66	6	24	5	82
19	6	18	5	82	5	40	6	96	6	54	6	12
20	6	48	6	12	5	64	7	32	6	84	6	42
21	6	78	6	36	5	94	7	68	7	20	6	72
22	7	08	6	66	6	24	8	04	7	50	7	02
23	7	38	6	96	6	48	8	34	7	80	7	32
24	7	68	7	20	6	72	8	70	8	16	7	62
25	7	98	7	50	7	02	9	06	8	46	7	92
26	8	34	7	80	7	32	9	42	8	82	8	22
27	8	64	8	10	7	62	9	78	9	18	8	58
28	9	24	8	70	8	10	10	44	9	78	9	12
29	9	84	9	24	8	64	11	10	10	38	9	72
30	10	44	9	84	9	18	11	82	11	04	10	32
31	11	10	10	44	9	72	12	48	11	70	10	92
32	11	70	11	04	10	26	13	20	12	36	11	58
33	12	30	11	58	10	80	13	92	13	02	12	18
34	12	96	12	12	11	34	14	58	13	68	12	78
35	13	56	12	72	11	82	15	30	14	34	13	38
36	14	16	13	26	12	36	16	02	15	00	13	98
For every decimetre more	0	60	0	54	0	48	0	72	0	66	0	60

To Westzaan 10 per cent. less.

Port Charges.—Harbour Dues :—For steamers loaded with timber, 3 c. (Dutch currency) per cubic metre, gross; coal, coke, or pig-iron, 2½ c.; iron ore, 1¾ c.; other cargoes, 4¼ c. Sailing vessels loaded with timber, 4 c.; coal, coke, or pig-iron, 3½ c.; iron ore, 2½ c.; other cargoes, 6 c.

Holland—Amsterdam (*continued*).

Ballast:—Amsterdam, alongside ship, 50 c. per ton; at night or after usual hours, an additional 10 c. per ton. **Towage**:—According to tariff.

Pro Forma Charges on a steamer of 959 net register tons with 2,178 tons of ore from Spain, with a depth of 56 decimetres:—

<i>Inward.</i>		Fl.	c.
Charges in Ymuiden—			
Boat attendance		21	00
Tug-boat from North Sea to Ymuiden		60	00
Agency		18	00
Charges in Amsterdam—			
Pilotage from sea to Amsterdam		147	96
Harbour dues and clearing certificate		197	72
Boat assistance for mooring and unmooring		12	00
<i>Outward in Ballast.</i>			
Charges in Amsterdam—			
Pilotage from Amsterdam to sea		12	51
Steam-tug from Ymuiden to Amsterdam and from Amsterdam to Ymuiden, as per contract		132	00
Charges in Ymuiden—			
Boat attendance		18	00
Pilotage to sea		16	10
Agency		9	00
		644	29 = £53 13s. 10d.

BROUWERSHAVEN.

Brouwershaven, in lat. 51°44' N., long. 3°55' E., on the eastern part of the north side of Schouwen, gives its name to the Gatway, or main navigable channel between the islands Schouwen and Goeree.

Population.—1,400.

Accommodation.—The road has excellent holding ground, and is well protected, with an average depth of 30 ft. While ships lie in the roads they are usually attended by a boat. In the winter time, when the river is frozen or drift ice is floating, it is of course dangerous for ships to lie in the roads. They are then moored alongside the dolphins, where they lie in perfect safety. First class lighters are obtainable. When a vessel has any infectious disease on board it must be reported to the pilot immediately he arrives, and no one is allowed to board the vessel until the doctor has held an inspection.

Pilotage.—Pilots can be found off Dungeness, and off the Gat.

Port Charges.—**Lighterage**:—2s. 6d. per ton. **Labourers**:—For lighters—rice, coffee, and similar articles, 8d. per ton; guano, 1s. 4d. **Labourers**:—For steamers—7d. per ton (except iron ore, which is 10d. per ton). These prices do not include the hire of shoots, baskets, or tubs, which can be had at moderate rates. **Ballast**:—1s. 3d. per ton, including trimming as required. **Water**:—4s. 2d. per 150 gallons. Beef 8d. to 10d., and bread 3d. per lb. **Boat Assistance** (four men):—6s. 8d. per day. **Brokerage**:—Usually 4 per cent. of the whole account. Tonnage and light dues, Custom House clearance, and pilot's distance money from the English Channel to the Gat have all been abolished. For steam-tug charges, see **Zierikzee**.

Pro Forma Charges on a steamer of $\frac{3,179}{1,051}$ tons register, cargo of wood in, and ballast out, drawing 20 ft. loaded:—

Holland—Brouwershaven (*continued*).

	Fl.	c.
Brokerage, £3	36	00
Pilotage, in and out, £21 17s. 1d.	262	25
Boat hire, 6s. 8d. per day	4	00
Reporting at Custom House and freight list, 6s. 8d.	4	00
	306	25 = £25 10s. 5d.

DELFFZYL.

Delfzyl, in lat. 53°20' N., long. 6°54' E., is situated on the river Ems.

Population.—8,000.

Imports.—Timber, coal, coke, grain, etc.

Exports.—Straw-boards, straw, moss litter, oats, flour, German coal, hay, and foundry coke.

Accommodation.—Vessels can anchor in the river on a soft mud bottom at a distance of about 500 yards from the shore in 30 to 36 ft. of water at ordinary low tide. The least depth in the river, or entrance to the roads from the sea, is 20 ft. at low water. There are two harbours. Buitenhaven (outer harbour) has a water area of 40 acres. The length of the tidal harbour from the lock to the end of the pier-head in the roads outside is 2,500 ft. The available width of the harbour entrance (between the pier-heads) from the roads is 200 ft. The width of deep water in the middle of the harbour is 65 ft.; depth of entrance at ordinary springs, high water 32 ft., low water 21 ft.; depth of entrance at ordinary neaps, high water 30 ft., length of swinging berth, 500 ft.; greatest width of deep water, 550 ft.; length of quayage, 740 ft.; depth at quayside at ordinary springs, high water 32 ft., low water 21 ft.; depth in the middle of the harbour at spring tides, and at the coal-lift ordinary high water springs, 32 to 33 ft.; average rise and fall of the tide, 8 to 9 ft.; average rise and fall at spring tides, 10 to 11 ft. There is a steam crane and railway facilities. Vessels discharge and load at the quays, or by means of lighters. Binnenhaven (inner harbour) is Government property, and is inside the lock of the canal to Gröningen. Length, 1,200 ft.; width, 270 ft.; length of lock, 200 ft.; width of lock, 34½ ft.; depth of water on the sill, 17½ ft.; depth of water from the lock to the inner harbour, 15 ft.; depth of inner harbour, 14½ ft.; length of quayage, 1,000 ft.

A basin has been opened with a mean depth of 16 to 17 ft. at low water. The canal running from Gröningen to Delfzyl is 16 miles long. It is available for vessels 180 ft. long, 33 ft. beam, and drawing 13 ft. Quayage extends along this canal for about 3,000 ft. from Delfzyl. The lighthouses enable vessels to work up the river Ems all night. A coal-tip belonging to the State Railway Company enables vessels taking coal or coke to secure a quick dispatch. Meat and all kinds of provisions can be obtained at reasonable prices.

Pilotage.—Vessels bound for Delfzyl, Gröningen, or any other Dutch port on the Ems, should take a Dutch pilot, as in the event of taking a German one both have to be paid, whereas ships bound for a German port on the Ems should take a German pilot only, for the same reason. The Dutch pilot-cutters have "Ems Delfzyl" painted on their mainsail, and can consequently be distinguished from the German boats with "Ems." Pilotage from and to the sea is paid according to draught. Pilotage from

Holland—Delfzyl (continued).

the roads to the harbour, in summer, 3 guilders; in winter, 4 guilders, but is not compulsory.

Port Charges.—Towage :—As per agreement. **Discharging** :—Coal, 40 c. per ton; deals, 85 c. per standard. No harbour dues.

Pro Forma Charges on a steamer of 815 net reg. tons, with a cargo of deals and battens, from Riga, and ballast out :—

	Fl.	c.
Pilotage inwards	110	60
Pilotage outwards	11	90
Harbour pilotage, in and out	6	00
Boatmen, in and out	12	00
Tugboat	60	00
Discharging 716 stds. at 85 c.	608	60
Insurance premium at 9 per cent. (workmen)	54	77
Clearing, collecting freight, etc., £5 5s.	63	00
Telegrams, telephone, petties, etc.	11	50

938 37 = £78 4s. 0d.

DORDRECHT.

Dordrecht, or Dordt, in lat. 51°48' N., long. 4°38' E., is on the river Maas. It is the nearest port for transit trade to Germany.

Population.—45,000.

Imports.—Wood, china-clay, phosphate, rice, oil seeds, and sleepers.

Exports.—Moss litter, pressed hay, coke, coal, margarine, and guano.

Accommodation.—Dordrecht can be reached from the North Sea within 3 or 4 hours by two waterways, that of Hellevoetsluis, by vessels drawing 21½ ft., and that of Brouwershaven, by vessels drawing 16 ft. Vessels load and discharge at the quays with rails alongside. Dordrecht is connected with the railways of Germany and Belgium.

Pilotage.—Compulsory. According to draught of vessel.

PILOTAGE DUES, IN AND OUT.

Depth in Decimetres.	From Sea to Shore, or without anchoring on Shore, to the Harbour.						From Shore or from the Harbour, without anchoring on Shore, to Sea.					
	In Summer.			In Winter.			In Summer.			In Winter.		
	Sailing Vessel.	Towed.	Steamer.	Sailing Vessel.	Towed.	Steamer.	Sailing Vessel.	Towed.	Steamer.	Sailing Vessel.	Towed.	Steamer.
15 or less	Fl. 7-20	Fl. 6-70	Fl. 6-30	Fl. 9-60	Fl. 9-00	Fl. 8-40	Fl. 5-20	Fl. 4-90	Fl. 4-60	Fl. 6-40	Fl. 6-00	Fl. 5-60
19	9-60	9-00	8-40	12-00	11-30	10-50	6-80	6-40	6-00	8-00	7-50	7-00
23	12-80	12-00	11-20	16-80	15-80	14-70	8-80	8-30	7-70	10-40	9-80	9-10
27	17-20	16-10	15-00	22-40	21-00	19-60	12-00	11-30	10-50	13-60	12-80	11-90
31	23-60	22-10	20-60	31-20	29-20	27-30	15-20	14-30	13-30	16-80	15-80	14-70
35	31-60	29-60	27-60	40-80	38-30	35-70	18-40	17-30	16-10	20-80	19-50	18-20
39	40-00	37-50	35-00	52-00	48-80	45-50	23-20	21-80	20-30	25-60	24-00	22-40
43	55-20	51-80	48-30	72-00	67-50	63-00	28-00	26-30	24-50	32-00	30-00	28-00
47	73-60	69-00	64-40	97-60	91-50	85-40	40-00	37-50	35-00	44-80	42-00	39-20
51	102-40	96-00	89-60	132-80	124-50	116-20	64-00	60-00	56-00	72-00	67-50	63-00
55	134-40	126-00	117-60	175-20	164-20	153-30	96-00	90-00	84-00	105-60	99-00	92-40
59	184-00	172-50	161-00	239-20	224-30	209-30	134-40	126-00	117-60	144-00	135-00	126-00
Every deci- metre more	12-00	11-20	10-50	16-00	15-00	14-00	9-60	9-00	8-40	9-60	9-00	8-40

Intermediate depths in proportion.

Holland—Dordrecht (*continued*).

Port Charges.—Port Dues :—Steamers up to 650 cubic metres—3 c. per cubic metre ; from 651 to 1,000, $3\frac{1}{2}$ c. per cubic metre ; 1,000 and above, $3\frac{3}{4}$ c. per cubic metre. Sailing vessels up to 650 cubic metres, $3\frac{1}{2}$ c. per cubic metre ; 650 and above, 6 c. per cubic metre. **Towage :—**Sailing vessels, 1s. per ton in and out. **Shipbroker :—**2d. per ton, or as per agreement. **Ballast :—**Winter, 1 fl. 40 c. ; summer, 1 fl. 15 c. per 2,000 kilos. **Consular Fees :—**British vessels, 1 fl. 52 c.

Pro Forma Charges on a steamer of $\frac{1,385.27}{869.82}$ tons register, with a cargo of lumber in, and ballast out, drawing 19 ft. loaded :—

	Fl.	c.
Harbour dues at $3\frac{3}{4}$ c. per cubic metre	147	20
Brokerage, £4 4s.	50	40
Pilotage in and out; in, 193 fl. 70 c.; out, 41 fl. 40 c.	235	10
Towage	60	00
Boat hire	15	00
	507	70 = £42 6s. 2d.

FLUSHING.

Flushing, or Vlissengen, in lat. $51^{\circ}28'$ N., long. $3^{\circ}35'$ E., is situated at the mouth of the river Scheldt, in the province of Zeeland, and is one of the finest and safest ports in Europe, available at any season, time, or tide.

Population.—20,000.

Imports.—Coal, petroleum, and timber.

Exports.—Shell and fresh fish, meat, etc.

Accommodation.—The Flushing docks are under the management of the Royal Shipbuilding and Engineering Company de Schelde. The inner docks are 1,650 ft. long, 650 ft. wide, 7,000 ft. of quayage. The large lock is 486 ft. long., $66\frac{1}{2}$ ft. wide at the entrance, 27 ft. deep on the sill at ordinary springs, and 25 at ordinary neaps. The small lock is 213 ft. long, $26\frac{1}{2}$ ft. wide at the entrance, 27 ft. deep on the sill at ordinary springs and 25 ft. at ordinary neaps. The outer harbour has 3,000 ft. of quayage, is 34 ft. deep at high water, and 22 ft. at low. There are cranes to lift from 1 to 3 tons, and one crane to lift 50 tons. There are warehouses round the docks, and the railway runs along the quays. There is a tip for loading coal. The company own a dry dock with 244 ft. available docking length, 52 ft. wide at the entrance at high water ordinary springs, 13 ft. on the sill and 13 ft. on the blocks at high water ordinary springs. The company build ships of 7,000 tons displacement; they have sheers to lift 70 tons, and have at their command the most modern appliances for carrying out repairs.

There are three or four steam-tug companies, and about twelve steam-tugs. Steamship communication with Queenborough daily.

Time Signals.—Chronometers can be checked. Four black circular discs are placed, perpendicularly, on the stone tower, on the west side of the great sea sluice, 5 minutes before the signal. The discs fall into a horizontal position at noon Flushing mean time, corresponding to 23 h. 45 m. 36.8 s. Greenwich mean time.

Pilotage.—Compulsory, according to the draught of the vessel.

Port Charges.—Dock Dues :—Steamers and sailing vessels of 500 cubic metres or less, $4\frac{1}{2}$ c. (Dutch currency) per cubic metre ; vessels of

Holland—Flushing (continued).

501 cubic metres to 1,000 cubic metres, 5 c. (Dutch currency) per cubic metre; vessels of 1,001 cubic metres and upwards, $5\frac{1}{2}$ c. (Dutch currency) per cubic metre.

Vessels remaining in the docks not longer than 60 hours, or entering the docks to repair, pay only half of the above rates. Vessels visiting the docks several voyages in the calendar year pay, the two first voyages, the above tariff; the third voyage, three-fourths of the above tariff; the fourth voyage, one-half of the above tariff; the fifth and the following voyages, two-fifths of the above tariff. Vessels making use of the inner docks are free of sluice dues, and only have to pay dock dues as above. **Brokerage**:—Commission on chartering, $2\frac{1}{2}$ to 5 per cent. on the amount of freight. Commission on disbursements, 5 per cent. Collecting freight, $\frac{1}{2}$ to 1 per cent. on the amount. **Loading Coal**:—By the tips, 2*d.* per ton.

Pro Forma Charges on a steamer of 2,100 tons net register (=5,950 cubic metres), discharging a cargo of 3,000 tons of coal in the inner docks at Flushing, sailing in ballast:—

	Fl.	c.
Pilotage from sea to Flushing Roads and thence to the dock	262	21
Pilotage from docks to sea	32	35
Boatmen for docking and undocking	36	00
Towage in and out (if required)	150	00
Harbour dues at $5\frac{1}{2}$ c. per cubic metre	327	25
Discharging 3,000 tons at 40 c. per ton	1,200	00
Bill of health	6	00
Stamps, telegrams, and petties	6	00
Brokerage, 5 per cent.	100	99

2,120 80 = £176 14*s.* 8*d.*

GOUDA.

Gouda, in lat. $52^{\circ}1' N.$, long. $4^{\circ}42' E.$, is situated on the right bank of the river Yssel, 11 miles N.E. of Rotterdam.

Population.—15,000.

Exports.—Cheese, clay pipes, bricks, etc.

Accommodation.—It can be reached by vessels of 9 ft. draught.

GRÖNINGEN.

Gröningen is in lat. $53^{\circ}14' N.$, long. $6^{\circ}32' E.$

Population.—74,272.

Accommodation.—There is a channel leading from Delfzyl to Gröningen, which will take vessels drawing 13 ft.; the length of this channel is about 15 miles. Classed vessels can nearly always obtain a freight of oats or straw-boards for England.

Pro Forma Charges on a steamer of 276 register tons, coming from England with coal, and leaving with a cargo of oats for Cardiff:—

	Fl.	c.
Pilotage inwards, 41 decimetres	41	30
Sluice and bridge money, Delfzyl to Gröningen	66	07
Assistance of boatmen	3	00
Clearance at Delfzyl	12	60
Pilotage, Delfzyl to Gröningen, summer service	6	00
Discharging 500 tons coal at 8 <i>d.</i>	200	00
Harbour dues at Gröningen	13	45
Loading 426 tons oats at 5 <i>d.</i> per ton	106	50
Pilotage, Gröningen to Delfzyl	6	00

Carried forward 454 92

Holland—Gröningen (*continued*).

Brought forward	Fl.	c.
Sluice dues outwards and bridge dues, laden	454	92
Boat assistance	66	07
Pilotage to sea, 41 decimetres, summer service	3	00
	22	40

546 39 = £45 10s. 8d.

HARLINGEN.

Harlingen is in lat. 53°10' N., long. 5°24' E.

Population.—10,000.

Imports.—Salt, coal, raisins, lard, fat, soda, cotton, linen, woollen goods, machinery, timber, wheat, rye, linseed, hemp, tar, potash, buckwheat, petroleum, and oil-cake.

Exports.—Butter, cheese, flax, cattle, grain, chicory, straw-boards, farina, straw, moss litter, German coal and coke, potatoes, etc.

Accommodation.—Vessels drawing 18 ft. can generally cross the bar without lightering. Vessels at low water can ground without the slightest risk, the bottom being soft mud. Anchorage will be found in the following harbours:—

	Length.	Width.	Length of Quayage.	Depth of Water.
Outer harbour	730 ft.	135 ft.	350 ft.	15 ft.
Nieuwe Willemshaven	2,440 „	460 „	1,220 „	18 ft. for 600 ft., and then 11 ft.
Willemshaven	506 „	330 „	1,190 „	18 ft.
Zuiderhaven	1,583 „	196 „	2,700 „	13½ „
Noorderhaven	1,113 „	106 „	2,000 „	10½ „

These depths are at high water; 5 to 6 ft. should be deducted to give the depths at low water.

The quays are connected with the railway. There is a private crane in the Zuiderhaven to lift 25 tons. Steam-tugs can be had. An agreement in writing should be made on engaging one. There are shipbuilding yards for repairing wooden vessels. There are four slips to take vessels to 200 tons, and three pontoons from 600 to 800 tons. There is quick dispatch. Steamers loaded with 1,000 to 1,200 tons of coal can be discharged in 18 to 20 hours, and loaded with 4,000 Sundsvall beams in 15 to 20 working hours; sawn wood about 80 standards daily.

Pilotage.—Compulsory.

Deci- metres.	INWARDS.				Deci- metres.	OUTWARDS.			
	Sailing Ships.		Steamers.			Sailing Ships.		Steamers.	
	Summer.	Winter.	Summer.	Winter.		Summer.	Winter.	Summer.	Winter.
	Fl.	Fl.	Fl.	Fl.		Fl.	Fl.	Fl.	Fl.
30	30.30	38.65	26.55	33.80	25	17.05	19.55	14.95	17.10
32	35.35	44.60	30.95	39.05	27	19.20	21.75	16.85	19.05
34	40.40	50.55	35.35	44.25	29	21.80	24.45	19.10	21.40
36	45.40	56.55	39.70	49.45	31	24.45	27.20	21.40	23.80
38	50.40	63.35	44.00	55.35	33	27.05	30.00	23.70	26.25
40	57.00	72.55	49.70	63.35	35	29.70	33.55	25.95	29.35
42	66.00	83.35	57.50	72.75	37	33.10	37.15	28.90	32.45
44	75.00	95.75	65.30	83.55	39	36.50	40.75	31.80	35.35
46	85.60	109.75	74.50	95.75	41	39.90	45.15	34.70	39.35
48	96.20	126.15	83.70	110.05	43	43.30	49.55	37.60	43.15
50	113.20	144.95	98.50	126.45	45	48.30	55.55	41.90	48.35
52	130.20	165.35	113.30	144.25	47	57.30	64.75	50.10	56.35
54	147.20	187.35	128.10	163.45	49	69.50	78.75	60.30	68.55
56	165.80	212.55	144.30	185.45	51	83.30	94.35	72.30	82.15
58	190.80	244.95	166.10	213.75	53	100.30	111.55	87.10	97.15
60	223.80	287.75	194.90	251.15	55	117.30	130.35	101.90	113.55
62	248.80	320.95	216.70	280.15	57	137.50	150.75	119.50	131.35
64	273.80	354.15	238.50	309.15	59	157.70	171.15	137.10	149.15

Intermediate depths in proportion.

Holland—Harlingen (*continued*).**Port Charges.—****HARBOUR DUES.**Per cubic metre
gross measurement.

<i>Steamers—</i>	
Loaded only with coal or coke	2'125 c.
" " wood	3'5 "
" with other cargoes	3'125 "
Ballast or empty	2 "
<i>Sail or other vessels—</i>	
Loaded	5 "
Ballast or empty	2'5 "
Passing through the harbour	2 "

Bridge Money :—60 c. per bridge (two bridges). **Light Dues** :—50 c. per vessel. **Towage** :—According to agreement. **Ballast** :—According to agreement. **Lighterage** :—50 fl. to 80 fl. per lighter.

Steamers calling for bunker coal are free of harbour dues when leaving within 24 hours, and only pay half pilotage in and out. Bunker coal, 11 to 12 fl. per ton free into bunkers.

Pro Forma Charges on a steamer of $\frac{3,295.79}{2,109.49}$ reg. tons, with cargo pitch pine in and ballast out:—

	Winter.		Summer.	
	Oct. 1 to May 1	May 1 to Oct. 1	May 1 to Oct. 1	
	Fl.	c.	Fl.	c.
Inward pilotage	140	00	135	00
Mooring	2	50	2	50
Boat hire and harbour-pilot	36	00	36	00
Custom House entries and bail	12	60	12	60
Harbour dues	513	79	513	79
Consulate	1	52	1	52
Outward pilotage	30	95	27	40
Hooker	1	00	1	00
Rafter's fee	10	00	10	00
Tugboat (to be agreed), in and out	84	00	84	00
Winchmen (to be agreed)	42	00	42	00
Telegrams and petty expenses	10	00	10	00
Clearance, £5 5s.	63	00	63	00
	947	36	938	81
	=£78 18s. 11d.		=£78 4s. 8d.	

HELDER, THE.

The Helder, in lat. 52°58' N., long. 4°43' E., is about 40 miles N. by W. of Amsterdam.

Population.—26,840.

Import.—Coal.

Accommodation.—The Texel Gat is the passage between the Helder and Texel island, and connects the North Sea with the Zuyder Zee, the Nieuwe Diep, and the Great North Holland Canal. The Texel is about 2 miles wide. It is the only deep-water harbour on the coast of Holland. There is a depth at high water of 33 ft., at low water of 29 ft. 4 in., and at lowest spring tides of 1 ft. less. The outer harbour is 6,100 ft. long, 360 ft. wide, 35 ft. deep at the entrance, and 24 ft. deep at the quayside. There is a crane to lift 5 tons. The Nieuwe Diep is about a mile in length, and its depth admits of vessels passing through at all times. The least depth on the inner bar of Schulpfen Gat in 1908 was 26½ ft. Every vessel must use her own chains and cables in mooring. There is an inner harbour, where the

Holland—Helder, The (continued).

Government have two dry docks; the largest is 367 ft. long, 64 ft. wide at the entrance, and 18 ft. on the sill. Railway connection with Amsterdam.

Time Signals.—Chronometers can be checked. Four black circular discs are placed perpendicularly, on the roof of the chief office of the marine establishment, 5 minutes before the signal. The discs fall into a horizontal position at noon Nieuwe Diep mean time, corresponding to 23 h. 40 m 53·6 s. Greenwich mean time.

Pilotage.—Compulsory. Same as Ymuiden. The Texel pilot vessels, schooner built and rigged, cruise in the English Channel, near the Isle of Wight. The coast pilot cutters are always cruising near the entrance of the Schulpden Gat, unless driven in by S.W. gales. The word "Texel" is painted in large letters on their mainsail, and they carry a blue flag with a white number on it. There are steam-tugs at Nieuwe Diep, which may be obtained by vessels in the offing showing two flags—one at the masthead and the other 4 or 5 ft. below it.

Port Charges.—

TOWAGE OUTWARDS.

To roads, up to 850 cubic metres,	26 fl. ;	above, 30½ c. per 10 cubic metres.		
To Kykduin " " "	46 fl. ;	" 54 c.	" "	" "
To Fairway Buoy, " "	66 fl. ;	" 78 c.	" "	" "

TOWAGE INWARDS.

From roads, up to 740 cubic metres,	26 fl. ;	above, 35 c. per 10 cubic metres.		
From Kykduin " " "	46 fl. ;	" 66 c.	" "	" "
From Fairway Buoy, " "	66 fl. ;	" 89 c.	" "	" "
Above these distances, 47 c. per 10 cubic metres per hour.				

Ballast:—At Nieuwe Diep, 1s. 8d. per ton alongside the ship in the inner harbour; 10 c. extra in the outer harbour. There are no harbour or sluice dues. **Water:**—1s. 8d. per 120 gallons. **Boat Hire:**—12 fl. to 24 fl. in and out. **Brokerage:**—1 to 2 per cent. on the gross amount of the freight. **Clearance Fees:**—According to cargo. **Labour:**—As per agreement. **Labourers' Insurance:**—8·915 per cent.

Pro Forma Charges on a steamer of 1,400 tons d.w., with a cargo of coal in and ballast out, drawing 17 ft. loaded:—

	Fl.	c.
Brokerage	60	00
Pilotage, in and out, 96 fl. and 18 fl.	114	00
Towage	24	00
Boat hire	24	00
Harbour rules	1	00
Cost of discharging	725	00
Labourers' insurance	59	50

1,007 50 = £83 19s. 2d.

HELLEVOETSLUIS.

Hellevoetsluis, in lat. 51°49' N., long. 4°8' E., is on the S.W. side of Voorne Island.

Population.—4,200.

Accommodation.—Hellevoetsluis has a large and good harbour, being the sea outlet of the Voorne Canal. Vessels drawing 17 ft. can get up here at high water neaps. Voorne Canal entrance lies to the E. of Hellevoetsluis. Vessels can pass in two hours into the river Maas, 9 English miles below Rotterdam. The canal is about 5½ miles long, and has double-tide locks at its extremities, 46 ft. wide; depth of water is 17 ft., but

Holland—Hellevoetsluis (*continued*).

this can be raised to 20 ft. This canal is not used by vessels going to Rotterdam since the New Waterway through the Hook of Holland has been opened.

There is a Government graving dock, 500 ft. long over all, 53.9 ft. wide at the entrance, and $18\frac{1}{2}$ ft. on the sill. This dock can be divided into two equal portions, but is only available for the merchant service by special permission.

No extensive repairs can be done.

HOORN.

Hoorn, in lat. $52^{\circ}39'$ N., long. $5^{\circ}2'$ E., is on the Zuyder Zee, about 20 miles N.E. of Amsterdam.

Population.—About 11,000.

Exports.—Butter, cheese, cattle, herrings, condensed milk, fruit, etc.

Accommodation.—There is 10 ft. of water close to the town. This port is only frequented by vessels of about 10 ft. draught. Ship-building is carried on here.

Port Dues.— $\frac{1}{2}$ d. per ton.

KOOGERPOLDER.

This port is now of no importance to shippers.

MAASSLUIS.

Maassluis is on the New Waterway between the Hook of Holland and Rotterdam, about 9 miles from Rotterdam.

Population.—9,000.

For **Charges**:—See **Rotterdam**.

MIDDELBURG.

Middelburg is in lat. $51^{\circ}30'$ N., long. $3^{\circ}37'$ E.

Population.—19,300.

Imports.—Coal and timber.

Exports.—Corn, potatoes, onions, fruits, vegetables, cattle, fish, and oysters.

Accommodation.—The Flushing docks communicate by a channel past Middelburg with Camp Veere; this channel has a depth of 23 ft.; the distance from Flushing to Middelburg is 4 miles. Vessels coming from the sea with a draught up to 23 ft. can proceed immediately up to Middelburg. There is a dry dock here, with a length of 413 ft.; breadth at high water level, $65\frac{1}{2}$ ft.; and a depth of 15 ft. on the sill. There are also engine works here.

Pilotage from and to the sea is obligatory, and paid according to a tariff regulated by the draught of a vessel. The pilots are Government pilots. The tariff is reduced 50 per cent. for vessels entering the channel exclusively for undergoing repairs, and for vessels staying not longer than 60 hours in the channel.

Holland—Middelburg (*continued*).

Port Charges.—Discharging:—Steamers, 27 c. per ton; sailing vessels, 30 c. per ton. **Loading:**—Steamers, 37 c. per ton, including stevedore; sailing vessels, 50 to 60 c. per ton, including stevedore. **Steam-tug:**—According to agreement.

Pro Forma Charges on a sailing vessel of 1,200 register tons, arriving from sea and discharging at the canal quay at Middelburg, and after reloading, leaving again for sea drawing 22 ft. :—

	Fl.	c.
Clearance in and out of Flushing	12	00
Pilotage from sea to Flushing (winter service, 363 fl. 80 c.) .	277	10
Pilotage from Flushing to Middelburg (winter service, 28 fl. 80 c.)	25	15
Steam-tug from sea to Flushing roads (only required in case of contrary winds), agreement	150	00
Steam-tug from Flushing roads to Middelburg, agreement	90	00
Sloop services	18	00
Harbour master's fee at Middelburg	14	00
Discharging 1,600 tons at 30 c. per ton	480	00
Loading 1,600 tons at 50 c. per ton (inclusive of stevedore)	800	00
Sloop services to Flushing	18	00
Steam-tug to Flushing roads, agreement	90	00
Pilotage to Flushing (winter service, 28 fl. 80 c.)	25	15
Pilotage from Flushing to sea (winter service, 216 fl.)	207	00
Commission on disbursement, 2½ per cent.	65	00
	2,271	40 = £189 5s. 8d.

Pro Forma Charges on a steamer of 902 register tons, arriving from sea and discharging at the canal quay at Middelburg, and, after reloading, leaving again for sea :—

	Fl.	c.
Clearing in and out at Flushing	12	00
Pilotage, in and out	179	52
Discharging 1,600 tons at 27 c. per delivered ton	432	00
Loading 1,600 tons at 37 c. per ton, inclusive of stevedore	592	00
Commission on disbursements, 2½ per cent.	50	00
	1,265	52 = £105 9s. 2d.

MOERDYK.

Moerdyk, in lat. 51°35' N., long. 4°68' E., is situated on the left bank of the Holland Diep, near Dordrecht.

It is only visited by a few vessels which are obliged to enter and clear at Hellevoetsluis or Brouwershaven. There are no harbour dues.

PEKELA AND TERMUNTERZYL.

Pekela is a small place above Delfzyl, and can only be reached by vessels of 6 ft. draught. Cargo is usually discharged at Termunterzyl (about 2 miles S.E. of Delfzyl) where vessels of 8 ft. draught can come. Vessels chartering for Pekela should always insert "lighterage free."

PURMEREND.

Purmerend is situated near Amsterdam, on the Great North Holland Canal.

Vessels bound here can go either via Ymuiden or Nieuwe Diep, the former is preferable, as it is cheaper and shorter.

Charges the same as at Amsterdam.

Holland.

ROTTERDAM.

Rotterdam, in lat. $51^{\circ}57'$ N., long. $4^{\circ}30'$ E., is on both banks of the Nieuwe Maas, 18 miles from the sea.

Population.—403,356.

Imports.—Earthenware and porcelain, agricultural and other machinery, grain, metals raw and manufactured, timber, coal, raw cotton, etc.

Exports.—Potatoes, butter, fruit, hides, cattle, wool, coal, grain, spirits, raw metals, timber, sugar, etc.

Accommodation.—The entrance for vessels to Rotterdam is by the New Waterway Canal at the Hook of Holland. Vessels drawing 27 to 28 ft. can come up to Rotterdam in two hours, as there are no bridges or sluices. The town is intersected by canals deep enough to allow large river vessels to lie alongside the warehouses by which they are lined. On both banks of the river are harbours and quays. There is a complete system of railways extending to all these quays, and alongside every warehouse connected with the main line, so that the quays are in direct railway connection with the interior of Holland, Germany, Switzerland, etc. The warehouse accommodation is full and convenient. There is a wet dock on the right bank of the Meuse, the depth on the sill at low water is about 15 ft., and the width of the entrance $49\frac{1}{4}$ ft. It is 4,430 ft. long and 164 ft. wide, and contains 3,940 ft. of quayage. Belonging to the city there are two steam coal hoists capable of lifting 50 and 30 tons respectively; one electric coal hoist lifting 30 tons; seventy-three steam, electric, and other cranes ranging in lifting power from $\frac{1}{2}$ to 30 tons; eleven capstans, and four winches with lifting powers of from $\frac{1}{2}$ to 2 tons. Belonging to private firms are one hydraulic coal hoist, lifting 22 tons; twenty-six steam and hand cranes, ranging in lifting power from $\frac{1}{2}$ to 60 tons; one floating crane to lift 4 tons, and four floating sheer legs to lift 20, 16, 16, and 60 tons respectively.

Besides railway connection, Rotterdam is connected with the interior of Holland and Germany by numerous canals and rivers, and an extensive fleet of river steamers and lighters, some of great loading capacity (3,000 tons dead weight), are used for conveying goods in all directions.

Among the works to be undertaken to meet the increasing requirements for the accommodation of shipping are the formation of new docks, and the dredging of the remaining 5 miles of the new waterway to a depth of $26\frac{1}{2}$ ft. at low water, which already obtains over a length of 15 miles. The total area of the Waalhaven Basin will be 766 acres, capable of accommodating 140 steamers in addition to those finding room along the quays. The present available area of canals and docks for berthing purposes is 305 acres, whilst 60 buoys give additional facilities for mooring in the river.

Grain steamers, as a rule, discharge their cargoes into large lighters that go up the Rhine. Rotterdam has a large import trade in American petroleum, and there are large tanks built for its accommodation, and tank wagons on the railway for its distribution to the interior. Masters carrying grain cargoes should be careful to insert in the bills of lading "weight unknown," as it is one of the "customs of the port" not to allow for any waste or draught, and consequent diminution in weight of grain.

Holland—Rotterdam (*continued*).

Dimensions of the floating docks are as follows :—

Belonging to the city of Rotterdam—

- First iron dock—length, 360 $\frac{1}{2}$ ft. ; width at entrance, 68 $\frac{1}{2}$ ft. ; depth on the sill, 21 ft. ;
lifting power, 6,000 tons.
Second iron dock—length, 295 ft. ; width at entrance, 68 $\frac{1}{2}$ ft. ; depth on the sill, 20 ft. ;
lifting power, 4,000 tons.
Third iron dock—length, 157 ft. ; width at entrance, 68 $\frac{1}{2}$ ft. ; depth on the sill, 20 ft. ;
lifting power, 2,000 tons.
Steel pontoon—length, 588 ft. ; width at entrance, 90 ft. ; depth on the sill, 25 ft. ;
lifting power, 15,600 tons.

Belonging to private firms—

- Floating No. 1—length, 301 ft. ; width at entrance, 55 ft. ; depth on the sill, 20 ft. ;
lifting power, 3,000 tons.
Floating No. 2—length, 438 ft. ; width at entrance, 79 ft. ; depth on the sill, 24 ft. ;
lifting power, 7,500 tons.

There are five patent slips, one with a lifting power of 3,000 tons, and one with a lifting power of 1,200 tons.

There are several shipbuilding yards, where all kinds of repairs can be effected.

Time Signals.—Chronometers can be checked. Four black circular discs are hoisted perpendicularly on the gate building, 5 minutes before the signal. The discs fall into a horizontal position at noon Rotterdam mean time, equal to 23 h. 42 m. 00·9 s. Greenwich mean time.

Pilotage.—**TARIFF OF PILOTAGE DUES FOR VESSELS ENTERING THE NEW WATERWAY.**

Summer Service, April 1 to September 30.

Draught of Water in Decimetres.	Steamer.			Vessel in Tow.			Sailing Vessel.		
	From Sea to Maassluis.	From Maassluis to Rotterdam, Schied., or Vlaardingen.	Pilotage Due.	From Sea to Maassluis.	From Maassluis to Rotterdam, Schied., or Vlaardingen.	Pilotage Due.	From Sea to Maassluis.	From Maassluis to Rotterdam, Schied., or Vlaardingen.	Pilotage Due.
	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.
15 and under	6.30	3.78	10.08	6.70	4.08	10.78	7.20	4.38	11.58
16	6.60	3.96	10.56	7.10	4.26	11.36	7.60	4.56	12.16
17	7.00	4.14	11.14	7.50	4.44	11.94	8.00	4.74	12.74
18	7.70	4.32	12.02	8.20	4.62	12.82	8.80	4.92	13.72
19	8.40	4.50	12.90	9.00	4.80	13.80	9.60	5.16	14.76
20	9.10	4.68	13.78	9.70	4.98	14.68	10.40	5.40	15.80
21	9.80	4.86	14.66	10.50	5.22	15.72	11.20	5.64	16.84
25	13.00	5.88	18.88	13.90	6.30	20.20	14.80	6.66	21.46
30	18.90	7.08	25.98	20.30	7.62	27.92	21.60	8.10	29.70
35	27.60	8.58	36.18	29.60	9.12	38.72	31.60	9.72	41.32
40	37.80	10.26	48.06	40.50	11.04	51.54	43.20	11.70	54.90
45	56.00	12.60	68.60	60.00	13.50	73.50	64.00	14.40	78.40
50	82.60	15.60	98.20	88.50	16.74	105.24	94.40	17.82	112.22
55	117.60	18.60	136.20	126.00	20.10	146.10	134.40	21.42	155.82
60	175.00	21.60	196.60	187.50	23.40	210.90	200.00	25.02	225.02
65	227.50	24.60	252.10	243.50	26.70	270.20	260.00	28.62	288.62
70	280.00	27.60	307.60	299.50	30.00	329.50	320.00	32.22	352.22
75	332.50	30.60	363.10	355.50	33.30	388.80	380.00	35.82	415.82
80	385.00	33.60	418.60	411.50	36.60	448.10	440.00	39.42	479.42
85	437.50	36.60	474.10	467.50	39.90	507.40	500.00	43.02	543.02

Intermediate depths in proportion.

Holland—Rotterdam (continued).*Winter Service, October 1 to March 31.*

Draught of Water in Decimetres.	Steamer.			Vessel in Tow.			Sailing Vessel.		
	From Sea to Maassluis.	From Maassluis to Rotterdam, Schied., or Vlaardingen.	Pilotage Due.	From Sea to Maassluis.	From Maassluis to Rotterdam, Schied., or Vlaardingen.	Pilotage Due.	From Sea to Maassluis.	From Maassluis to Rotterdam, Schied., or Vlaardingen.	Pilotage Due.
	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.
15 and under	8-40	4-44	12-84	9-00	4-80	13-80	9-60	5-04	14-64
16	8-80	4-68	13-48	9-40	5-04	14-44	10-00	5-34	15-34
17	9-10	4-92	14-02	9-80	5-28	15-08	10-40	5-64	16-04
18	9-80	5-16	14-96	10-50	5-58	16-08	11-20	5-94	17-14
19	10-50	5-46	15-96	11-30	5-88	17-18	12-00	6-24	18-24
20	11-60	5-76	17-36	12-40	6-18	18-58	13-20	6-60	19-80
21	12-60	6-00	18-60	13-50	6-48	19-98	14-40	6-90	21-30
25	16-80	7-08	23-88	18-00	7-56	25-56	19-20	8-10	27-30
30	25-20	8-58	33-78	27-00	9-18	36-18	28-80	9-78	38-58
35	35-70	10-20	45-90	38-30	10-92	49-22	40-80	11-70	52-50
40	49-70	12-18	61-88	53-30	13-08	66-38	56-80	13-92	70-72
45	72-80	14-88	87-68	78-00	15-96	93-96	83-20	16-92	100-12
50	107-80	17-88	125-68	115-50	19-20	134-70	123-20	20-46	143-66
55	153-30	21-24	174-54	164-20	22-68	186-88	175-20	24-36	199-56
60	227-50	24-54	252-04	243-80	26-28	270-08	260-00	28-26	288-26
65	297-50	27-84	325-34	318-80	29-88	348-68	340-00	32-16	372-16
70	367-50	31-14	398-64	393-80	33-48	427-28	420-00	36-06	456-06
75	437-50	34-44	471-94	468-80	37-08	505-88	500-00	39-96	539-96
80	507-50	37-74	545-24	543-80	40-68	584-48	580-00	43-86	623-86
85	577-50	41-04	618-54	618-80	44-28	663-08	660-00	58-76	718-76

Intermediate depths in proportion.

TARIFF OF PILOTAGE DUES FOR VESSELS PROCEEDING TO SEA.

Draught of Water in Decimetres.	From the Roads of Maassluis, to and in full Sea.					
	Summer Service. April 1 to September 30.			Winter Service. October 1 to March 31.		
	Sailing Vessel.	Vessel in Tow.	Steamer.	Sailing Vessel.	Vessel in Tow.	Steamer.
	Fl.	Fl.	Fl.	Fl.	Fl.	Fl.
15 and under	5-20	4-90	4-60	6-40	6-00	5-60
16	5-60	5-20	4-90	6-80	6-40	6-00
17	6-00	5-60	5-30	7-20	6-80	6-30
18	6-40	6-00	5-60	7-60	7-10	6-70
19	6-80	6-40	6-00	8-00	7-50	7-00
20	7-20	6-70	6-30	8-40	7-90	7-40
21	7-60	7-10	6-70	8-80	8-30	7-70
25	10-40	9-80	9-10	12-00	11-30	10-50
30	14-40	13-50	12-60	16-00	15-00	14-00
35	18-40	17-30	16-10	20-80	19-50	18-20
40	24-40	22-90	21-40	27-20	25-50	23-80
45	32-00	30-00	28-00	36-80	34-50	32-20
50	57-60	54-00	50-40	64-00	60-00	56-00
55	96-00	90-00	84-00	105-60	99-00	92-40
60	144-00	135-00	126-00	153-60	144-00	134-40
65	192-00	180-00	168-00	201-60	189-00	176-40
70	240-00	225-00	210-00	249-60	234-00	218-40
75	288-00	270-00	252-00	297-60	279-00	260-40
For each decimetre above 75	9-60	9-00	8-40	9-60	9-00	8-40

Towage.—Rates according to tariff.

Pro Forma Charges on a steamer of 2,566 net reg. tons (3,990 gross reg. tons), with a cargo of about 6,828 tons of grain from Bahia Blanca, discharged by hand :—

Holland—Rotterdam (*continued*).

	Fl.	c.
Disbursements at Maassluis (pilotage, etc.), inwards	385	75
Harbour dues " " " " outwards	3	00
Boatman	423	50
Harbour pilotage	47	00
Protest	21	00
Entries, and bail in the Custom House	23	50
Advertising for notifying receivers of cargo	12	60
Consul	4	10
Postages, petties, and receipt stamps }	1	53
Telegrams	25	75
Commission for performing ships' business: Inwards, £5 5s. at 12 fl. 10 c.	63	53
Tugboat assistance	78	50
Stevedore, discharging, labourers' insurance, winchmen and superior, sending delivery	2,221	34
Pilotage to sea	48	74
Rotterdam Shipping Association, $\frac{1}{4}$ c. per 1000 kilos. cargo	17	10
	3,376	94 = £281 8s. 3d.

Pro Forma Charges on a vessel of 1,700 net reg. tons (2,620 gross reg. tons), with a cargo of about 1,490 standards from St. Petersburg :—

	Fl.	c.
Expenses at Maassluis (pilotage, etc.), inwards	258	00
Harbour dues	278	49
Harbour pilotage	9	50
Boatman	35	00
Entries, and bail in the Custom House	12	60
Postages, petties, and receipt stamps }	9	75
Telegrams		
Lifeboat Society		
Commission for performing ships' business: Inwards, £5 5s. at 12 fl. 10 c.	63	53
Tugboat assistance	67	50
Stevedore, discharging, winchmen, and extra for discharging bridge, deck, bunker	1,289	45
Pilotage to sea	21	62
Rotterdam Shipping Association, $\frac{1}{4}$ c. per 1,000 kilos. cargo	9	38
	2,054	82 = £171 4s. 8d.

Pro Forma Charges on a vessel of 2,531 net reg. tons (3,893 gross reg. tons), with a cargo of about 5,682 tons of grain from Baltimore, discharged by elevators :—

	Fl.	c.
Expenses at Maassluis (pilotage, etc.), inwards	453	85
Harbour dues " " " " outwards	3	00
Harbour pilotage	413	19
Boatman	28	00
Protest	23	00
Custom House officers	23	50
Tugboat assistance	9	40
Entries and bail in the Custom House	4	00
Advertising for notifying receivers of cargo	12	60
Consul	4	10
Postages, petties, and receipt stamps }	7	63
Telegrams	17	26
Lifeboat Society		
Commission for performing ship's business, £5 5s. at 12 fl. 10 c.	63	53
Stevedore, elevators, and check weighing	2,038	35
Pilotage to sea	44	38
Rotterdam Shipping Association, $\frac{1}{4}$ c. per ton cargo	14	20
	3,159	99 = £263 6s. 8d.

Holland.

SCHEVENINGEN.

Scheveningen, in lat. $52^{\circ}8' N.$, long. $4^{\circ}18' E.$, is a fishing village, only frequented by fishing boats.

SCHIEDAM.

Schiedam, in lat. $51^{\circ}56' N.$ long. $4^{\circ}22' E.$, is situated on the river Maas, at the mouth of the river Schie, about 4 English miles W. of Rotterdam.

Population.—30,892.

Imports.—Coal, grain, etc.

Exports.—Gin, etc.

For **Charges**:—See **Rotterdam**.

TERMUNTERZYL.

(See **Pekela and Termunterzyl**, p. 308.)

TERNEUZEN.

Terneuzen, in lat. $51^{\circ}21' N.$, long. $3^{\circ}49' E.$, is on the south bank of the river Scheldt, at the entrance of the canal leading to Selzaete and Ghent.

Population.—About 10,000.

Imports.—Pig-iron, ore, copals, coal, timber, pulp-wood, china-clay, salt-cake, etc.

Exports.—Rails, manufactured iron, zinc, coal, glass, timber, phosphate, etc.

Accommodation.—The harbour is tidal. The length of the canal from Terneuzen to Ghent is about 19 miles; it is 183 ft. wide at water level. The locks are 295 ft. long with 18 ft. of water on the sill at ordinary tides. The west lock is 39 ft. wide at the entrance, and the east lock 26 ft. The dimensions of ships allowed to pass through the west lock are:—Length, 295 ft.; breadth, 37.8 ft.; depth at springs, 18.4 ft.; depth at neaps, 15 to 16 ft. With special permission vessels with a beam of 38 ft. are allowed to pass this lock. The east lock is used for the inland sailing craft.

A new sluice was opened in October, 1908. It is 500 ft. long, 61 ft. wide, and has 27 ft. on the sill at ordinary tides. The canal is to be widened, and deepened to 28 ft. 8 in. Whilst this work is proceeding only steamers and vessels not exceeding the following dimensions will be allowed to pass the new sluice and steam, or be towed, up to Ghent: Length, 367 ft.; breadth, 48 ft.; draught, $21\frac{1}{4}$ ft. There are several cranes capable of lifting from 3,000 to 4,000 kilos. (3 to 4 tons). There are regular lines of steamers between here and London, Goole, Leith, Liverpool, Glasgow and Middlesbro'. Terneuzen is in railway communication with the interior of Belgium and Germany.

Port Charges.—There are no harbour or quay dues. **Lighterage** :

—About 60 c. per man per hour. **Hire of Lighters** :—About 200 fl.

Pro Forma Charges on a steamer of 1,085 net reg. tons, with a cargo of pulp-wood in, and ballast out, drawing 18 ft. (55 decimetres) in; 12 ft. (37 decimetres) out; 835 cubic fathoms of pulp-wood discharged in 5 days :—

	Fl.	c.
Pilotage in from sea and out to sea	410	00
Dock pilotage	25	00
Custom House, for surveying	19	60
Watchman	5	00
Commission for clearance, 1 per cent. of freight	279	75
Boat in and out of harbour	40	00
Boatmen for shifting in harbour	12	50
Pilot	10	00
Discharging 835 cubic fathoms of pulp-wood at 3 fl. per fathom	2,505	00
Insurance labourers, 9 per cent.	225	45
Half expenses of measuring cargo	58	00
	3,590	30 = £299 3s. 10d.

Terschelling Island is in lat. $53^{\circ}25'$ N., long. $5^{\circ}20'$ E.

Population.—4,000.

Imports.—Coal and cement.

Export.—Cattle.

Accommodation.—There is a depth at high water of 16½ ft., at low water 11 ft., and at lowest spring tides 10½ ft. Coal can always be obtained at a moderate price.

Pilotage.—Compulsory. About 3 fl. per ft. draught.

Port Charges.—Towage :—From the sea to the harbour, £5 10s.

Ballast :—About 50 c. per ton. **Labour :—**About 2 fl. per day. **Brokerage :—**2½ per cent.

Texel is an island in lat. $53^{\circ}5'$ N., long. $4^{\circ}48'$ E.

Population.—5,681.

There is no shipping harbour here, and consequently no trade.

Veendam, in lat. $53^{\circ}6' \text{ N.}$, long. $6^{\circ}51' \text{ E.}$, is a village about 15 miles S.E. of Gröningen, and can only be reached by small craft of about $4\frac{1}{2}$ ft. draught.

Veere, or Camp Veere, is on the E. coast of the island of Walcheren, on the Veere Gat, which separates Walcheren from North Beveland.

Accommodation.—There is no harbour, but vessels find safe anchorage in the channel in 4½ fathoms of water, about a cable length from the town.

Dues and Charges on a brig of 204 reg. tons (244 Dutch tons),
nut coal in, and ballast out, drawing $13\frac{1}{2}$ ft. loaded, £13 10s.

Vlaardingen is on the New Waterway leading to Rotterdam.

Population.—21,000.

For **Charges**:—See **Rotterdam**.

Ymuiden is in lat. $52^{\circ}28'$ N., long. $4^{\circ}33'$ E.

Imports.—Coal, ice, pulp-wood, and paper pulp.

Accommodation.—Ymuiden, the outer haven of the North Sea Canal, is formed by two stone jetties, each 1,800 yards long, which extend from the shore at a distance of 1,300 yards apart. Although the harbour

Holland—Ymuiden (continued).

entrance between the pier heads is 260 metres (852 ft.) wide, the navigable part of it cannot be estimated to be above 220 metres (721 ft.) wide, on account of the loose blocks of concrete lying under water along the pier heads, and extending at least 20 metres (65½ ft.) from the visible fixed part. The available space affords an easy access to the harbour, but it is necessary to watch the tidal currents running in the direction of the coast and therefore right across the harbour mouth. During flood the harbour should be entered close to the south pier, and during ebb close to the north pier. In the inner harbour and in the branch canal leading to the new lock, there are mooring posts where vessels can be stopped and hauled on towards the lock. Captains of vessels of a draught of more than 80 decimetres (26 ft.) are always obliged to compare the exact draught of their vessel with the signal of maximum draught allowed for entering the new lock, shown at the south side of the new lock and visible at the entrance of the inner harbour. Vessels with a draught of 9·20 metres (30 ft.) can enter the outer harbour at all times of the tide. There are 2,400 ft. of quayage, and a wooden jetty for loading.

Pilotage.—As per tariff, regulated according to the draught of a vessel. The service is now performed by pilot-steamers. **Towage** :—According to tariff.

Pro Forma Charges on a steamer of 3,550 net reg. tons (15,700 cubic metres gross) with a cargo of linseed in, and ballast out, drawing 21 ft. loaded :—

	Fl.	c.
Brokerage, in, 36 fl. ; out, 18 fl.	54	00
Pilotage, from sea and to sea (winter service, 298 fl. 90 c.)	231	00
Canal pilotage, up and down (winter service 42 fl. 36 c.)	36	06
Boat hire, up and down	45	00
	366	06 = £30 10s. 1d.

ZAANDAM.

Zaandam, in lat. 52°28' N., long. 4°48' E., is 4½ miles north of Amsterdam.

Population.—24,277.

Imports.—Timber, rice, grain, seeds, etc.

Accommodation.—The harbour is good and safe, and is at any time accessible to vessels drawing 26 ft. Vessels bound to Zaandam enter the North Sea Canal at Ymuiden, like those bound to Amsterdam.

Pilotage.—See **Amsterdam**.

Port Charges.—Harbour Dues :—Steamers, 3½ c. (Dutch currency) per cubic metre, gross, for all cargoes ; sailing vessels, 4¼ c. per cubic metre, gross, for all cargoes. **Ballast** :—Alongside the ship, 50 c. per ton

Pro Forma Charges on a steamer of 2,203 net reg. tons, 2,999 gross reg. tons = 8,488 cubic metres gross. Inwards : Loaded, drawing 21 ft.=64 decimetres. Outwards : In ballast, drawing 13 ft.=40 decimetres :—

	Summer about. Fl.	c.	Winter about. Fl.	c.
Pilotage from sea to Ymuiden	217	00	283	50
" " Ymuiden to Zaandam	25	80	30	78
Boat assistance in the North Sea Canal, in and out, for two men. For every man more, 9 fl., or 15s.	42	00	42	00
Carried forward	284	80	356	28

Holland—Zaandam (*continued*).

	Summer about. Fl. c.	Winter about. Fl. c.
Brought forward	284 80	356 28
Harbour dues at Zaandam	297 08	297 08
Pilotage, Zaandam to the sea	35 68	40 18
	317 56	693 54
	=£51 9s. 3d.	=£57 15s. 11d.

Pro Forma Charges on a sailing vessel, measuring 1,000 gross reg. tons=2,830 cubic metres gross; draught, loaded, 19 ft.=58 decimetres :—

	Summer about. Fl. c.	Winter about. Fl. c.
<i>Inward—</i>		
¹ Pilotage from sea to Ymuiden, if towed	157 50	204 80
Towage, according to tariff (but as a rule cheaper towage available)	191 50	191 50
Pilotage from Ymuiden to Zaandam	25 14	29 52
Boat assistance in the North Sea Canal	16 00	16 00
Towage from Ymuiden to Zaandam at tariff rate	145 49	145 49
Harbour dues at Zaandam	134 43	134 43
<i>Outward, in ballast, drawing 14 feet = 43 decimetres.</i>		
Towage Zaandam-Ymuiden, ballasted or loaded	72 74	72 74
Pilotage Zaandam to sea, ballasted	43 34	49 62
Towage Ymuiden to sea, ballasted or loaded	106 55	106 55
Boat assistance	6 00	6 00
	898 69	956 65
	=£74 17s. 9d.	=£79 14s. 5d.

¹ Pilotage from sea to Ymuiden: If sailing, Summer, 168 fl.; Winter, 218 fl. 40 c.

ZIERIKZEE.

Zierikzee is in lat. 51°40' N., long. 3°55' E.

Population.—7,000.

Accommodation.—Zierikzee is connected with the East Scheldt by a harbour 1½ miles long, and running straight in a W.S.W. direction. A canal passes through the Isle of Zuid Beveland, by which vessels of the largest size can go to Antwerp, Brussels, and other Belgian ports, as easily by the Roompot as by way of Flushing. Vessels drawing 13 ft. can enter the harbour of Zierikzee, which is seldom blocked up with ice. There is a shipbuilding yard here.

Port Charges.—Harbour Dues:—3½ c. per cubic metre. **Ballast:**—65 c. per ton. **Harbour Pilotage:**—1 fl. 50 c. for each move. **Brokerage:**—Commission on freight, 2½ per cent. Commission on charter, 2½ per cent.

TOWAGE SERVICE.

Distance.	DUTCH TONNAGE.								For each ten above 1,000 tons.
	Below								
	300	400	500	600	700	800	900	1,000	
From Helvoet to sea	Fl. 75	Fl. 80	Fl. 95	Fl. 115	Fl. 125	Fl. 140	Fl. 150	Fl. 160	5 c.
„ „ to Zierikzee	110	112	125	150	170	200	210	220	5 „
„ Zierikzee to Helvoet	110	112	125	150	170	200	210	220	5 „
„ Helvoet to Dordrecht	80	88	100	120	140	170	180	190	5 „
„ Zierikzee to sea	50	60	70	80	90	100	110	120	5 „
„ „ to Dordrecht	120	140	150	160	170	180	200	210	5 „
„ sea to Zierikzee or Helvoet	90	100	115	136	160	180	200	225	20 „

Two ships being towed together, each ship pays 20 fl. less. The second vessel has to us one hawser.

One ship wishing two boats pays 40 fl. more for the second boat.

Holland—Zierikzee (*continued*).**Pro Forma Charges** on a vessel of 226 reg. tons, drawing 15 ft. :—

	Fl.	c.
Inward pilotage (in winter, from October 1 till April 1, 90 fl. 40 c.)	68	80
Pilotage in harbour	9	54
Reporting at the Custom House	12	60
Harbour dues, 3½ c. per cubic metre	22	38
Ballast, 70 tons, at 65 c. per ton	45	50
Pilotage to sea (in winter, 14 fl. 40 c.)	12	80

171 62 = £14 6s. 0d.

ZWARTSLUIS.

Zwartsluis, in lat. 52°38' N., long. 6°5' E., is situated on the Zwarte Water, 11 miles from Zwolle.

Population.—4,000.**Exports.**—Moss litter, bog ore, etc.

Accommodation.—There is a depth of 8 ft. of water on the bar. It is frequented by vessels up to 350 reg. tons.

Pilotage.—In and out, £2 15s.

Port Charges.—**Harbour Dues** :—1d. per reg. ton. **Loading and Discharging Cargo** :—6d. per ton.

ZWOLLE.

Zwolle, in lat. 52°31' N., long. 6°7' E., is situated on the Zwarte Water, about 10 miles from the Zuyder Zee.

Population.—33,550.**Exports.**—Cattle, bog ore, etc.

Accommodation.—This port is only frequented by vessels up to 400 tons reg. There is 10 ft. of water on the bar.

Pilotage.—In and out, £2 15s.

Port Charges.—**Harbour Dues** :—1d. per reg. ton. **Loading and Discharging Cargo** :—6d. per ton.

Pro Forma Charges on a sailing vessel of 150 tons, coming from Hamburg, and discharging half cargo at Zwolle :—

	£	s.	d.
Pilotage, inwards and outwards from Kampen	2	1	8
Tugboat from the Zuyder Zee to Katerveer	1	5	0
Sluice fee, Katerveer	0	1	0
Tugboat from Katerveer through the canal to Zwolle	0	6	8
Bridge, sluice and harbour dues at Zwolle	0	13	4
Discharging half cargo at 30 c. per ton.	3	15	0

£8 2 8

ITALY.

Italy is a kingdom in the south of Europe, which, with the two islands of Sicily and Sardinia, has an area of 110,550 square miles and a population of 33,640,710. It has a very extensive coast line, about 4,000 miles, and many fine harbours. The executive power belongs exclusively to the Sovereign and is exercised by him through responsible ministers; whilst the legislative authority rests with the King and Parliament, the latter consisting of two Chambers.

Commerce.—The trade of Italy, of an annual value of nearly two hundred million pounds sterling, is mainly maritime, and is carried on under the direction of the Minister of Commerce, Industry and Agriculture, subject to the provisions of treaties granting “most favoured nation treatment” in matters of commerce and navigation to Great Britain, Switzerland, Germany, Russia, France, Austria, and other countries. For the determination of Customs values, etc., there is a permanent Central Commission, comprising official members, representatives of commercial corporations, etc. For imports and exports the parties interested declare the value and quantity of the goods, together with the country of origin or destination. These particulars must include the gross weight in case of goods subject to a duty of 20 lire per quintal (8s. 1½d. per cwt.) or less; the net legal weight (i.e. with the deduction of an official tare) in the case of goods subject to a duty of from 20 to 40 lire per quintal (8s. 1½d. to 16s. 3d. per cwt.), and the actual net weight in the case of goods taxed at over 40 lire per quintal. Inaccurate declarations are punishable by fine if the inaccuracies are prejudicial to the Treasury.

Mercantile Marine.—The commercial navy of Italy comprises 5,529 vessels, with a total tonnage of 1,010,797, made up of 497,537 tons steam, and 503,260 tons sail.

Internal Communications.—There are good roads in Lombardy and Sardinia, but in central and southern Italy they are very defective, the best being the old Roman highways. There are 10,333 miles of railway open for traffic in the kingdom. The State are the owners of and work 7,824 miles of line, whilst they are also responsible for the working of 486 miles owned by private companies; the remaining 2,023 miles are private property worked by concessionaires. The completion of the great Alpine tunnels has facilitated communication with the countries of western and central Europe. By the Mont Cenis Tunnel the railway system of Italy communicates with that of France; by the Simplon with that of France and Switzerland, and by the line over the Brenner Pass with that of Austria. The St. Gothard Tunnel links the railways of Italy to those of Switzerland and Germany, thus making Genoa to some extent the port of south-western Germany. The State system of post, telegraph, and telephone has been developed on modern lines.

Currency, Weights and Measures.—The present monetary convention between Italy, France, Belgium, Switzerland, and Greece

Italy.

is tacitly continued from year to year. According to its terms the five contracting States have their gold and silver coins of the same fineness and current value. In Italy the monetary unit is the lira of 100 centesimi—having an intrinsic value of 25·225 of £1 sterling. Exchange, however, fluctuates considerably in different ports, but a rate of 25·40 lire=£1 will be found to represent the average. The coin in circulation consists of gold 10 lire and 20 lire pieces; 1 lira, 2 lire and 5 lire silver pieces, and 20 to 25 cent nickel pieces. The banks issue notes of a face value of 50, 100, 500, and 1,000 lire, and the State notes for small amounts, i.e., 5, 10 and 25 lire. The weights and measures of Italy are the same as those of France, the names only being altered to the Italian form. There are a few local variations, which should be borne in mind when chartering for Italian ports.

Anchorage Dues.—Ships arriving at any Italian port with cargo from a foreign port or in ballast for the purpose of loading, pay as under :—

Steamers, 1 lira 40 c. per reg. ton. ¹
Sailing vessels above 100 tons, 80 c. per reg. ton.
" under 100 tons, 50 c. " "

¹ Good for 30 running days at any Italian port. Steamers trading to Italian ports may compound by paying three times this amount, and they are then entitled to call at any Italian port for a year without further payment.

Sailing vessels (Italian, or foreign assimilated to Italian by treaty) trading in the Mediterranean exclusively, within Gibraltar, Dardanelles, and Isthmus of Suez, 60 c. per reg. ton.

Sailing vessels which have paid in one port of Italy one of the above dues are at liberty to trade, within four months, in any other port in Italy without any other payment, so long as they do not touch at any foreign port, and steamers are at liberty to trade at any other port for 30 days.

Steamers trading exclusively within the ports of Italy, without touching at a foreign port, 50 c. per ton.

Sailing vessels or steamers discharging or loading goods in any port of Italy, not exceeding in quantity one-tenth of the reg. tonnage, pay $\frac{1}{4}$ only of the anchorage dues.

Masters who wish to avail themselves of this law and discharge a part of cargo, and desire to have the benefit of a reduction in the anchorage dues, should make a statement to that effect to the Director of Customs on presentation of the manifest, without which statement they will be charged the full amount of the dues.

English vessels are by this law treated the same as Italian.

Custom House Regulation.—All masters on entering an Italian port, and before taking pratique, must have their manifest (for cargo and provisions) compiled and signed for presentation, in the absence of which they will be subject to a fine of 5 to 500 lire. It often occurs that shipmasters neglect this rule and are fined.

Government Dry Dock Tariff.—The charges are the same at all Government dry docks in the kingdom of Italy.

	First day.		Following days.	
	Lire	c.	Lire	c.
Vessels under 250 gross reg. tonnage	200	00	100	00
For each gross ton over 250 to 1,000	0	40	0	20
" 1,000 to 2,000	0	30	0	15
" 2000 and above	0	20	0	10

Holidays and Sundays do not count unless work is carried on.

Charter Parties.—In drawing up charter parties for Italian

Italy.

ports it should be stipulated that the freight is to be paid in "gold or silver," Italian currency, at the current rate of exchange of sight bills on London. "In cash" is no use, as the paper currency is considered as cash, and is legal tender.

Emigration.—Steamers clearing from an Italian port for that of a country at a considerable distance are permitted to carry emigrants on the first between-deck and the second one below, provided that the height of the accommodation thus provided on each deck is at least 2 metres. No steamer is allowed to lodge emigrants on more than two decks, unless it should be that there are deck cabins upon the open deck, when these may be made use of, provided they are of solid construction. Every emigrant accommodated in a deck cabin and on the upper between-deck must be allowed a space of at least 2.75 cubic metres, in computing which any height above 2.50 metres is not to be taken into account; any emigrant lodged on the lower between-deck must have assigned to him a space of not less than 3 cubic metres. But notwithstanding the foregoing, and whatever may be the number of available places according to the internal capacity of the vessels, the embarkation of emigrants in such numbers as to overcrowd the deck of the steamer is forbidden. Every emigrant must be allowed on the open deck a space of at least 0.45 square metres, including the deck cabins and the upper deck, if the steamer has such, provided the same are solidly built, supplied with strongly fixed bulwarks and readily accessible. In computing this free space the space reserved for the use of first and second-class passengers must be deducted.

The total area of the hatches and all other apertures supplying air to the space occupied by the emigrants, both in the upper and lower between-decks, must equal not less than 5 per cent. of the entire surface of the space itself, otherwise the number to be carried must be reduced irrespective of the accommodation available.

Every place below deck in which more than 25 emigrants are accommodated must be readily accessible by means of a hatchway provided with steps. One such staircase is sufficient if the number of emigrants does not exceed 50; if above 50 and less than 150 there must be two staircases, and above 150 three staircases. Should the number of emigrants be more than 200 the space in which they are accommodated must be readily accessible by means of two hatchways, each provided with two stairs, one forward and the other aft, or if the other means of ventilation are sufficient then by a large hatchway provided with four stairs. Each stairway must be about 80 centimetres wide, and provided with a hand-rail, and so as to ensure the safety of children, protected up to the height of the hand-rail by a network, which may be of string or cloth firmly fixed.

The ordinary berths must not be less than 1.80 metres in length and 0.56 metres in width clear space. The level of the lower berths must be at least 40 centimetres above the floor level, and the upper berth 70 centimetres above the level of the lower one, and not less than 70 centimetres from the ceiling. The berths, which must all be numbered, are to be constructed of iron, divided from each other by suitable separations, extending all the way and firmly and accurately fixed. Each berth shall be provided with a mattress and a pillow, either separate or attached, filled with vegetable fibre. There must be not less than two blankets.

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Each ordinary berth may only be used for one single person above six years of age, or for two children above one year and under six years.

A suitable number of special berths not less than 80 centimetres wide may be provided in lieu of so many ordinary berths, each for the accommodation of two children over six and under ten years of age, of the same sex, and preferably belonging to the same family.

Women are to be lodged in places separated by firm partitions from those of the men and preferably on the upper deck. Boys of over 7 years of age must not be lodged in the women's dormitory, nor girls over seven in the men's dormitory. Any exception to this rule, which will only be made under special circumstances, must be authorised previous to the start of the voyage by the Visiting Commission, or en route by the governing medical officer or by the travelling Commissioner. In this respect, in the case of large steamers in which the accommodation is wholly or partly provided by large cabins containing a limited number of berths, the Visiting Commission have power to authorise the occupation of such cabins each by a family group.

The kitchen in which the food for the emigrants is to be prepared must be separate from that intended for passengers of other classes. It must be of a size and fitted and equipped with such utensils as shall, in the opinion of the Visiting Commission, be sufficient to provide for the requirements of the emigrants which the ship is authorised to carry. The use of copper utensils not fully tinned, or formed of alloys containing lead, either in the cooking or distribution of food, is prohibited.

Food.—

RATIONS OF PROVISIONS FOR EMIGRANTS.

Quality of the Articles.	Ration. Grammes.	Days of Distribution.
Fresh bread of pure wheat, good quality and baking	700	Every day
Or biscuits of first quality	500	Every day.
Fresh beef	250	Five days a week.
Or preserved	200	
Rice	120	On two days a week on which meat is distributed.
Macaroni, etc., of pure hard grain and of good quality—		
If in soup	100	Every day of the week excepting the two on which rice is distributed.
If dry	160	
Dried peas or beans	50	Five days a week on which meat is distributed.
Tunny in oil	50	Two days a week on which meat is not distributed.
Potatoes	200	Two days a week on which meat is not distributed.
Cheese, of good quality	50	On the two days weekly on which meat is not distributed, and on one flesh day of the week on which coffee is not distributed.
Coffee, of good quality	20	Every day of the week excepting the two flesh days.
Brown sugar, of good quality	30	Every day of the week excepting the two on which coffee is not distributed.
Salt anchovies	30	On a flesh day of the week on which coffee is not distributed.

RATIONS OF PROVISIONS FOR EMIGRANTS—*continued.*

Quality of the Articles.	Ration. Grammes.	Days of Distribution.
Olive oil of good quality	20	Every day.
Salt	20	Every day.
Pure Italian wine of not less than 12° .	$\frac{1}{2}$ litre	Five days a week on which coffee is distributed.
Pure Italian wine of not less than 12°	$\frac{3}{4}$ litre	Two days a week on which coffee is not distributed.

NOTES.

1. Between latitudes 30° N. and 30° S. the ration of wine shall be $\frac{1}{2}$ litre daily, and 25 grammes of coffee per emigrant shall be daily distributed to each emigrant.
2. The days on which meat will not be distributed will be fixed by the doctor, but they may not be consecutive.
3. Fresh bread shall be distributed at least twice a day.
4. Every steamer must carry, in addition to that required for hospital use, at least 200 lemons for every 100 emigrants, for sale to the emigrants. Part of this may be in the form of pure lemon juice.
5. At least 5 tons of ice must be carried, and more if the steamer is without a refrigerating chamber.

Hospital Comforts.—SPECIAL PROVISIONS FOR INFIRMARY USE ON THE BASIS OF 1,000
EMIGRANTS AND 30 DAYS' VOYAGE.

Prepared Liebig, small jars	25
Vermicelli, etc.	20 kilos.
Semolina	25 "
Fowls	50
Eggs	1,000
Lemons	500
Barolo wine, bottles	24
Marsala wine, bottles	24
Cognac, bottles	12
Sterilized milk	50 litres.

SPECIAL PROVISION FOR BABIES ON THE BASIS OF 100 AND 30 DAYS'
VOYAGE.

Milk food, boxes	12
Condensed milk $\frac{1}{4}$ litre tins	24
Sterilized milk, $\frac{1}{2}$ litres	24

N.B.—The infirmary and baby supplies are to be kept in a separate place, at the sole disposal and control of the doctor.

Water.—Pure drinking water must be shipped at the port of embarkation in such quantities that, taking into account the longest probable duration of the voyage, the supply carried, together with the quantity which may be obtained from the distilling apparatus, shall provide 5 litres per person per diem, whilst the available supply must never be less than 3 days' consumption. It is to be stored in tanks secure from any possibility of pollution during the voyage, and protected as far as possible from the influence of high temperature. The tanks must be thoroughly cleaned out prior to the commencement of each voyage, and the water must not be put into them until they have been examined by the Visiting Commission. In addition to the provision of water tanks on deck for the emigrants, small ones containing 25 to 30 litres each must be placed in each room of the upper between-decks for use by the emigrants during the night, or when, during bad weather, they cannot go on deck. In order that such tanks may also serve for those on the lower between-decks, they must be placed near the staircases leading to the same. The water is to be drawn off by means of taps.

Italy.

ALASSIO.

Alassio (or Arraci) in lat. $44^{\circ}1' N.$, long. $8^{\circ}10' E.$, is about 41 miles S.W. of Genoa.

Population.—About 6,000.

Accommodation.—There is good anchorage in 10 to 18 fathoms of water, about a mile from the town, but open to S.W. winds.

ALGHERO.

Alghero, in lat. $40^{\circ}32' N.$, long. $8^{\circ}22' E.$, is on the W. coast of Sardinia.

Population.—About 11,000.

Exports.—Wine, butter, cheese, wool, skins, tobacco, rags, anchovies, coral, and bones.

Accommodation.—There is good anchorage during the summer in 8 to 10 fathoms, about a mile from the town. There is 4 fathoms about 5 cable lengths off. The anchorage is exposed to winds from S. and S.W.

AMALFI.

Amalfi, in lat. $40^{\circ}37' N.$, long. $14^{\circ}34' E.$, is about 9 miles S.W. of Salerno.

Population.—About 7,000.

Accommodation.—A mole is being built running into the sea from the N. to the S.E., having a length of about 300 yards. This will afford shelter for small vessels; otherwise the anchorage is in the open roadstead in deep water.

AMANTEA.

Amantea is in lat. $39^{\circ}8' N.$, long. $16^{\circ}7' E.$

Population.—About 5,000.

Accommodation.—It is an open roadstead. Anchorage in 5 fathoms, about half a mile off shore.

ANCONA.

Ancona is in lat. $43^{\circ}36' N.$, long. $13^{\circ}31' E.$

Population.—56,835.

Imports.—Coal, dry goods, sugar, drugs, railway construction material, jute, etc.

Exports.—Lamb skins, rags, hemp, silk, walnut wood, and asphalt.

Accommodation.—Ancona is the only harbour in this part of the Adriatic which is sufficiently capacious to receive vessels of large tonnage up to 24 ft. draught. The harbour, which is 180 acres in extent, is formed by a jetty and a breakwater, with an entrance 1,140 ft. wide. The eastern portion is bordered by quays and walls. The north jetty projects 700 yards to the westward from the northern point of the harbour. The south breakwater shelters the harbour from westerly and south-westerly winds. A considerable sea is thrown in by the winds from the N.W., and ships are often prevented from loading or discharging for days in the winter time. There are two piers running parallel to each other, and two projecting moles. They extend from the bastion to the depth of 4 fathoms, having

Italy—Ancona (*continued*).

between them and the south jetty a channel 164 ft. wide. The bottom of the harbour is of blue clay. The depth varies greatly. There is room in the port, within the lighthouse, for thirty large vessels. Merchant steamers of 24 ft. draught go alongside the quays, which are 950 ft. long, to discharge. There is room for nine steamers alongside. Vessels making for Ancona should stand well to the N.W. in order to avoid the new south mole. There is a red and green light at the extremity, red on N. mole, and green on S. The current sets to the S. at the rate of 3 to 3½ knots an hour, within 7 miles of the land. Extensive repairs can be carried out, as there are three building slips, and vessels of 6,000 tons burden are built. There is a crane to lift from 8 to 10 tons.

Pilotage.—Optional. The following is the tariff:—Sailing or steam vessels : 8 c. per net reg. ton, with a minimum of 15 lire and a maximum of 150 lire.

Port Charges.—Anchorage and Sanitary Dues.—See Italy. **Weighing Dues** :—10 c. per ton. **Mooring** :—5 lire for each man required. **Interpreter's Fee at Pratique Office** :—5 lire. **Manifest** :—5 lire. **Quarantine Expenses** :—2½ lire per day for each guard required, or as directed by the Health Office. **Bill of Health** :—3 lire 60 c. **Labour** :—5 lire per day. **Ballast** :—In winter, 2½ lire per ton ; in summer, 2 lire 25 c. **Shingle** :—In winter, 2 lire 75 c. per ton ; in summer, 2 lire 50 c. **Stevedore** :—Discharging coal dust, 75 c. per ton ; large coal, 85 c. per ton ; coke, 1 lira 50 c. per ton ; railway construction material, 1 lira 50 c. to 1 lira 75 c. per ton. **Water** :—About 5 lire per ton pumped into the ship's tanks by the water boat.

The local Chamber of Commerce has issued a decree which establishes that in all cases of steamships arriving here with a complete cargo of merchandise subject to duty, and having a clause in the charter party to be discharged according to the custom of the port, such custom is to be interpreted as meaning a minimum of 220 tons per working day, from April 1 to October 1, and 180 tons per day during the other five months of the year.

Pro Forma Charges on a steamer with 3,000 tons of coal from England to Ancona :—

	Lire.	c.
Pratique office interpreter	5	00
Inward pilotage and mooring	146	68
Manifests and stamp papers	12	30
Consul's fees, 12s. 6d.	16	95
Anchorage and sanitary dues	2,305	00
Entering and clearing	20	05
Boat hire	35	00
Outward pilotage and unmooring	73	34
Fresh water	117	50
Boys driving winches	32	00
Hospital fees and medicines	10	00
Fire guard or night watchman	39	00
Brokerage and interpreter, £5 sterling	135	00

2,947 82 = £116 1s. 2d.

N.B.—The discharging of coal cargoes is effected by the consignees as per terms of charter party, and deducted in the freight settlement form.

AUGUSTA.

Augusta, in lat. 37°14' N., long 15°13' E., is about 12 miles N. of Syracuse.

Italy—Bari (*continued*).

Consulate Fees :—10 lire. **Custom House Charges** :—14 lire 90 c. **Agency Fees** :—For entering and clearing the vessel, 125 lire. **Fees for Mooring the Ship in Harbour** :—Vessels of 1 to 200 tons, 22 lire; from 201 tons and above, 25 lire. Unmooring, same charges. **Hire of Stages** :—1 lira per day. **Mooring Chains** :—5 lire per day. **Water** :—From 6 to 8 lire per 1,000 litres. **Provisions** :—Fresh beef, 7*d.* to 8*d.* per lb. Vegetables plentiful and at low price.

BARLETTA.

Barletta is in lat. 41°19' N., long. 16°15' E.

Population.—42,022.

Imports.—Timber, coal, iron, mineral oils, phosphates, pyrites, etc.

Exports.—Wine, oil, fruit, wool, tartar and tartaric acid, brandy, cereals, salt, and empty casks.

Accommodation.—The harbour of Barletta is about 33 miles N.W. of Bari, and is very safe, being protected from all winds. The break-water is completed, and steamers can now lie alongside the quay. Wine loading is effected very expeditiously, 600 to 700 casks of wine being often stowed in a day. Coal is discharged at the rate of 500 tons per day. The port has been dredged, and a depth of about 21 ft. of water assured.

Port Charges.—Anchorage Dues :—1 lira 40 c. per ton. **Discharging** :—Coal, 10*d.* per ton.

Pro Forma Charges on a Danish steamer of 1,176 reg. tons, discharging coal from Newcastle-on-Tyne :—

	Lire	c.
Anchorage dues at 1 lira 40 c. per ton, plus stamps	1710	80
Mooring and unmooring	40	00
Pilotage, in and out	98	40
Sanitary interpreter	3	00
Fire guards on board	15	05
Manifests and stamps	40	15
Custom House indemnities	32	10
Brokerage, £5 5 <i>s.</i>	132	20
Cash to the master	200	00
Ship chandler's bill	403	50
Telegrams and stamps	23	35
Gratuity to stevedore for quick dispatch	50	00
Discharging 2,619 tons at 10 <i>d.</i> , less 2 per cent.	2,694	30

5,442 85 = £214 5*s.* 9*d.*

This steamer discharged her cargo in 4½ days only.

BRINDISI.

Brindisi is in lat. 40°39' N., long. 17°58' E.

Population.—23,106.

Imports.—Coal, iron, sugar, coffee, wheat, flour, petroleum, hides, salt, fish, Manchester goods, etc.

Exports.—Olive oil, wine, figs, tartar, oats, linseed, and almonds.

Accommodation.—Brindisi affords the best anchorage for large vessels on the western shore of the Adriatic. Dredging works are now being

Italy—Brindisi (continued).

carried on in the outer harbour, and when completed the area available for the anchorage of vessels will be largely increased. The new quay wall on the S.E. side of the channel is now finished. The canal itself, 240 yards long, 110 yards wide, affords a splendid entrance to the inner harbour, the depth of water being from wall to wall 10 metres ($32\frac{1}{2}$ ft.). The depth of the whole of the inner harbour is maintained at 10 metres wherever there are deep water quays, so that the largest vessels can steam into berth alongside the quays and discharge or load cargo without difficulty. There is approximately a mile of deep water quays, and all round the inner port, where these do not exist, dwarf quay walls having a height of 5 ft. at water level are being constructed.

Before the formation of the coal porters' unions a steam collier was often discharged at the rate of 2,000 tons a day, but now (in view of the improved wages earned by agricultural labourers) the coal porters' unions have limited their membership to the number sufficient to discharge one steamer at the rate of 1,000 tons a day. Actually, however, they refuse to bind themselves by contract to discharge more than 500 tons per day from any one steamer. If only two steamers happen to be ready for discharging at the same time, there is no difficulty, but should a third arrive (as sometimes happens) work would be delayed for all three.

Pilotage.— $10\frac{1}{2}$ c. or 1*d.* per net reg. ton, in and out.

Port Charges.—Anchorage Dues:—1 lira 45 c. per net reg. ton.
Stevedore:—Loading or discharging, 10*d.* per ton.

Pro Forma Charges on a steamer of 3,929 gross tons (2,955 net tons), with cargo of 5,329 tons coal for the railway, 7 days in port:—

	Lire	c.	
Interpreter	3	00	
Pilotage and boat	282	54	
Anchorage tax at 1 lira 45 c. per ton	4,284	75	
Manifest stamp and clearance	28	60	
Working overtime and gratuities	82	40	
Postages and petties	5	25	
Telegrams	14	05	
Water—60 tons, boilers, at 2 lire 50 c.	150	00	
„ 9 „ crew, at 3 lire	27	00	
Cash to captain	700	00	
Night watchman	28	00	
Washing linen	18	00	
Rope hire, discharge 5,329 tons at $1\frac{1}{2}$ c. per ton	79	95	£ s. d.
British consular fees			0 12 6
Turkish and Russian visé			1 16 0
Agency			5 0 0
Dispatch money to consignee (charter 500 tons daily, 5 days saved)			35 0 0
Discharge as per charter, 5,329 tons at 10 <i>d.</i> , effected in 7 days			222 0 10
	5,703	54	—224 11 0
			£489 0 4

If vessel for other consignee than railway, no dispatch payable.

CAGLIARI.

Cagliari, in lat. $39^{\circ}13'$ N., long. $9^{\circ}8'$ E., is the capital of the island of Sardinia.

Italy—Cagliari (*continued*).**Population.**—53,747.**Imports.**—Machinery, cotton, iron, steel, timber, textiles, groceries, dried fish, etc.**Exports.**—Ores, salt, charcoal, wine, cheese, wool, tunny, etc.

Accommodation.—The harbour is formed by an elbow-shaped breakwater 629 yards long. The space of water in the port, enclosed by a line drawn from the end of the breakwater to Point La Perdexedda, is 17 acres, including the inner port, which is 2 acres. There is a depth in this harbour, alongside the wharves, of from 6 to 26 ft.; the channel leading to it is 23 ft. deep. There is a well arranged lazaretto, a landing pier, a good dockyard, where small repairs can be executed, a bonded warehouse, and on the north mole a crane that will lift 10 tons. There is anchorage outside the port in 4 to 10 fathoms. Provisions of all kinds are plentiful and reasonable in price. Water, 2 lire per 220 gallons brought alongside.

Cagliari is connected by telegraph with the Continent. The principal trade of the island is carried on here.

Port Charges.—Anchorage Dues:—1 lira 40 c. per reg. ton. **Discharging Ballast:**—1 lira per ton.

Pro Forma Charges on a steamer of 1,000 reg. tons, from a foreign port, with cargo in and out:—

	Lire.	c.
Anchorage dues, at 1 lira 40 c. per ton	1,400	00
Custom House, for manifest	15	00
Clearing out vessel, and general assistance, £4	100	00
Pilotage in and out, and boat in assistance	73	00
Permits	3	00
Bill of health	4	20
Stamps to bills of lading	3	60
	1,598	80
Consul's charges, 12s. 6d.	15	65
	1,614	45 = £63 11s. 3d.

There are no expenses for stowage of lead ore, etc., cargo being put on board at shippers' expense. Ships loading calamine pay 60 c. per ton towage expenses, by condition of charter.

CARLOFORTE.

Carloforte, in lat. 39°7' N., long. 8°20' E., is on the E. coast of the island of San Pietro.

Population.—8,000.**Imports.**—Coal, timber, wheat, etc.**Exports.**—Ores, etc.

Accommodation.—Carloforte roadstead is well sheltered, and there is from 4 to 7 fathoms of water. The passage to the roadstead is interspersed with shoal spots having only 2 to 3 fathoms.

A vessel entering by the south passage should not approach too near Point Colonne, as there is a shoal which extends about half a mile off shore. Between Cala Seta—which forms the N.W. point of the island of San Antioco—and Carloforte there is a good anchorage in 6 to 8 fathoms, and here vessels should wait for a pilot.

In the Gulf of Palmas, on the E. side of the island of San Antioco, there is excellent anchorage everywhere in 4 to 12 fathoms. The anchorage

Italy—Carloforte (continued).

is only open to the S. Cargo is loaded from large barges that are towed to the vessels. In stormy weather the loading of ships is wholly suspended. Vessels entering must hoist their national flag. Shipmasters must report themselves at the health office within 24 hours of their arrival. Ships' stores can be had, and small repairs effected.

Pilotage.—A pilot is indispensable to strangers; pilotage in, 6 c. per reg. ton; out, 3 c. per reg. ton; mooring, 3 c. per reg. ton.

Port Charges.—**Anchorage Dues.**—See **Italy.** **Ballast:**—1 lira 25 c. per ton put on board. **Bill of Health:**—5 lire. **Stevedoring:**—60 c. per ton. Vessels placed in quarantine have to pay:—Guardian, 3 lire per day; doctor's visits, 4 lire each; fumigating permit, 2 lire 50 c.

Pro Forma Charges on a steamer of 1,115 reg. tons, from Marseilles, bound to Antwerp:—

	Lire	c.
Anchorage at 1 lira 40 c. per reg. ton	1,561	00
Italian bill of health	5	00
Custom manifests, in and out	18	50
Interpreter to the health office	3	00
Interpreter on board with Customs guards	5	00
Belgian bill of health	3	00
Five telegrams	9	80
Pilotage in at 6 c. per reg. ton; and mooring twice	133	80
English consul, stamps with bill of health	28	00
Entering, clearing the steamer, and interpreter	100	00
Boat hire, 3 days at 5 lire per day	15	00

1,882 10 = £74 2s. 0d.

CASTELLAMARE DEL GOLFO.

Castellamare del Golfo, in lat. 38°0' N., long. 12°53' E., is on the N. side of the island of Sicily, in the bay of the same name.

Population.—20,665.

Export.—Wine.

Accommodation.—The bay is spacious, and has deep water along its shores, but during the winter months it is exposed to the northerly winds, and at such times is not considered safe. The anchorage is good. Casks are thrown into the sea, and towed out to the steamers. A quay has been built to facilitate loading operations.

CASTELLAMARE DI STABIA.

Castellamare di Stabia, in lat. 40°40' N., long. 14°29' E., is about 13 miles S.E. of Naples lighthouse.

Population.—32,841.

Imports.—Wheat, wood, iron, coal, semolina, cheese, sardines, sulphur, etc.

Exports.—Macaroni, potatoes, cask ribs, etc.

Accommodation.—The total length of the piers is about 3,000 ft. with a depth alongside of from 3 to 6 fathoms. Vessels up to 24 ft. draught can enter the port and get to a berth. There is a railway track running on the wharves all round the port connecting with the main line. Sailing vessels up to 300 reg. tons load cask ribs here for other Mediterranean ports.

Italy—Castellamare di Stabia (*continued*).

Pilotage.—Not compulsory. 6 c. per reg. ton in, and 3 c. per reg. ton out. **Mooring:**—About 40 lire for steamers or sailing vessels of 1,000 tons.

Port Charges.—**Anchorage Dues:**—1 lira 45 c. per ton. **Towage:**—As per agreement. **Consular Fees:**—British, 32 lire 15 c.; French, 12 lire 50 c.; Spanish, 50 lire; Greek, 10 c. per ton for vessels of 300 tons and upwards; American, 25 lire. **Ballast:**—From 1 lira to 1 lira 50 c. per ton.

Pro Forma Charges on a steamer of 1,000 reg. tons, with a cargo of 1,800 tons in, and ballast out, drawing 24 ft. loaded:—

	Lire	c.
Harbour dues and stamps at 1 lira 45 c. per reg. ton	1,450	00
Brokerage	100	00
Pilotage in and out	90	00
Boat hire, for a week at 4 lire per day	28	00
	1,668	00 = £65 13s. 4d.

Watchman (when vessels carry gunpowder, spirits, petroleum, or have lights during the night) 2 lire per day, and 3 lire per night.

CASTRO.

Castro is in lat. 40°1' N., long. 18°24' E.

Population.—About 6,000.

Accommodation.—Castro Bay is well sheltered from the winds between N. and S.W., but exposed to those from E. and S.E. Vessels anchor about half a mile S.W. of the promontory on which stands the town. Anchorage is in 8 fathoms on mud and weeds. The harbour only admits small vessels.

CATANIA.

Catania, in lat. 37°28' N., long. 15°4' E., is on the E. coast of Sicily, 31 miles N.N.W. of Syracuse.

Population.—149,295.

Imports.—Colonial goods, iron, coal, and machinery.

Exports.—Sulphur, wheat, barley, rice, beans, Indian corn, linseed, hemp seed, oranges, lemons, almonds, cotton, sumach, lava stone, etc.

Accommodation.—The port is protected by a breakwater about 1,260 yards long. At the entrance there is from 39 to 59 ft. of water. There is 7½ acres with under 13 ft., 4½ with from 13 to 26 ft., and 66 with above 26 ft. At Catania there are no steam or hydraulic cranes. 600 tons of coal can be discharged per day. The railway lines on the wharves are in connection with the main line. There are two hand cranes to lift 3 tons; one to lift 5 tons; floating sheers to lift 40 tons.

The new port has an area of 22¾ acres with 2,979 ft. of quayage, with a depth alongside of 23 to 29½ ft. There are six berths for steamers alongside the quays, and for eight steamers end on. The Government has voted £200,000 for the construction of a mole to afford protection from S.E. winds. The old port has an area of 22¾ acres, with 1,640 ft. of quayage, with a depth alongside of from 19 to 26 ft. There are three machine shops for small repairs.

Italy—Catania (continued).

Time Signals.—Chronometers can be checked. A black ball is hoisted, three minutes before noon, on the roof of the Convent of the Benedictines, and dropped at noon Mid-European time, corresponding to 23 h. 00 m. 00 s. Greenwich mean time, and 0 h. 0 m. 22 s. local mean time. A gun is fired simultaneously.

Pilotage.—**Pilotage Inwards:**—8 c. per reg. ton up to 1,000 tons, this being the maximum charge. **Pilotage Outwards:**—Half of the above fee, according to tonnage. Mooring and unmooring, from 50 to 80 lire, according to agreement.

Port Charges.—**Anchorage Dues.**—See **Italy**. **Discharging Ballast:**—1 lira 25 c. to 1 lira 50 c. per ton, employing six persons; if more are required, extra wages have to be paid at the rate of 4 to 5 lire per man per day. **Discharging Coal:**—1 lira per ton. **Sanitary Interpreter's Fee:**—5 lire. **Bill of Health:**—6 lire 90 c. for 500 tons and upwards; 3 lire 30 c. under 500 tons. **Manifest:**—30 lire. **Loading Ballast:**—2 lire per ton placed on the ship's deck. **Clearing Agent:**—25 lire. **Clearing Fee:**—16 lire 75 c. This last fee is not compulsory, but it is generally paid by steamers to obtain dispatch. **Supplying Water:**—5 lire per ton. **Interpreter's Attendance:**—50 to 100 lire. Collecting and remitting freight from £3 to £5.

No fees or presents whatever are due to the Custom House officers or Government officials during Custom hours, although masters are often charged for such by the interpreters and watermen.

Pro Forma Charges on a steamer of 1,000 tons net reg., with a cargo of 2,200 tons coal from the United Kingdom, clearing in ballast:—

	Lire	c.
Anchorage due, at 1 lira 40 c. per reg. ton	1,400	00
Pilotage in, and mooring and unmooring	140	00
Sanitary interpreter	5	00
Bill of health	6	90
Manifest	30	00
Clearing agent	25	00
„ fee.	16	75
Discharging coal at 1 lira per ton	2,200	00
Ballast, 400 tons at 2 lire	800	00
Collecting freight	101	60
	<hr/> 4,725	<hr/> 25 = £186 0s. 8d.

CATANZARO.

Catanzaro is in lat. 38°57' N., long. 16°34' E.

Population.—31,824.

Exports.—Olive oil, dry figs, sulphur, etc.

Accommodation.—Vessels anchor at a place named the Marina of Catanzaro, about 120 fathoms from the shore, in 35 fathoms of water, with two anchors ahead and 100 fathoms chain; two hawsers, one from each quarter, are made fast to a buoy moored about 70 fathoms from the shore. If there be more than one vessel, the others must moor to the shore. Ships' stores cannot be obtained.

Pilotage.—Not required. If used, in, 25 lire; out, 10 lire.

Port Charges.—**Anchorage Dues.**—See **Italy**. **Bill of Health:**—15 lire. **Stevedore:**—Loading oil, 1 lira 50 c. per ton. **Mooring and Unmooring:**—30 lire.

*Italy.***CATTOLICA.**

Cattolica is about 15 miles N.W. of Fano, lat. 43°55' N., long. 12°45' E.

Accommodation.—Small vessels anchor in 12 ft. of water, about a mile off shore, but are quite exposed to winds from N.W. round to N.E. S.W. winds are dangerous.

CHIAVARI.

Chiavari, in lat. 44°18' N., long. 9°19' E., stands near the entrance to the Bay of Rapallo, about 22 miles E.S.E. of Genoa.

Population.—About 11,000.

Exports.—Marble, slate, and anchovies.

Accommodation.—It is an open roadstead, with 3¼ fathoms close to the shore.

CHIOGGIA.

Chioggia, or Chiozza, in lat. 45°13' N., long. 12°18' E., is about 14 miles S. of Venice.

Population.—30,000.

Imports.—Firewood, building timber, stone, charcoal, and coal.

Exports.—Vegetables and bricks.

Accommodation.—The channels which have recently been dredged have a depth of 4 metres (13 ft.) at high water, and 2·60 metres (8 ft.) at low water. In the centre of the entrance there is a sand bank, which has a minimum depth of 2·10 metres (6½ ft.), and vessels passing follow the channel leading to San Felice, which has a minimum depth of 5 metres (16 ft.). This port is mostly visited by small craft not exceeding 50 tons, but sometimes vessels up to 250 reg. tons come here.

The wharves at Lombard Canal have a length of over 800 metres (2,620 ft.), and there is also good mooring accommodation where goods can be dealt with on the Saline mole, which has a length of 350 metres (1,147 ft.). Loading and unloading is effected by the crews, there being no organized bodies of labourers for that purpose.

Pilotage.—Not compulsory. If desired vessels may employ pilots belonging to Venice who go as far as Punta Maistra. Rates same as for Venice, Section 1. These pilots, however, are not usually employed, and as soon as a vessel is sighted here a boat goes out with experienced men, who guide the vessel inside and attend to mooring and towing, for a moderate sum to be arranged.

Labour.—About 5 lire per day.

CIVITAVECCHIA.

Civitavecchia, in lat. 42°5' N., long. 11°48' E., is the seaport of Rome.

Population.—18,500.

Imports.—Coal, coke, pig iron, sulphur, rails, fire-bricks, timber, corn, oats, maize, wine, live animals, phosphates, etc.

Exports.—Staves, alum, charcoal, cement, coal, timber, calcium carbide, etc.

Italy—Civitavecchia (continued).

Accommodation.—The outer harbour has an area of 24 acres. Vessels drawing more than 25 ft. must be moored to the breakwater immediately they enter; they are fairly safe, except in strong westerly winds. Other vessels can proceed to the inner port, and anchor at the breakwater, which is now considered safe. The inner port has an area of 44 acres, with 5,775 ft. of quayage, with from 10 to 17 ft. alongside. The depth of the entrance is from 23 to 25 ft., and there is 20 to 21 ft. in the harbour. There are no cranes. The Arsenal has a water area of 7 acres, with 2,006 ft. of quayage, with 13 ft. alongside. The depth at the entrance is 14 ft.

Vessels wishing to moor alongside the Calata quay must discharge in lighters to bring their draught to 19 ft. Vessels moored to the outer breakwater should have good hawsers (wire rope is useless) to resist the cross sea which is often raging round the breakwater.

Pilotage.—Optional. If a pilot is taken the charge is 10 c. per reg. ton in, and 5 c. per reg. ton out. At night time the charge is 10 per cent. more. For changing berth the charge is one-third the pilotage fee. The maximum charge is on 2,000 tons reg.

Port Charges.—Anchorage Dues.—See **Italy**. **Ballast:**—3 lire per ton. **Water** for drinking, 5 lire per ton. **Mooring and Unmooring:**—35 to 45 lire. **Winchman:**—2 lire 50 c. per day. **Brokerage:**—£5 5s. **Clearance Fee** and expenses about £2. **Stevedore:**—Loading and discharging, 1s. per ton. Coal, 10d. per ton. Coal is no longer weighed, as receivers generally agree with masters, in accordance with coal charter parties, to pay freight on bill of lading quantity, less 2 per cent. **Commission on Freight:**—Steam, 2 per cent; sail, 6 per cent. **Boat Hire:**—3 to 4 lire per day. **Provisions and Stores** can be procured at moderate prices.

COTRONE.

Cotrone is in lat. 39°8' N., long. 17°8' E.

Population.—About 6,000.

Accommodation.—The harbour is protected by a spit of land on the S., and by a mole on the N.E., but can only admit vessels of small size, as it is not considered safe. There is 15 ft. of water within 200 yards of the town and inside the mole, but the space for vessels of this draught is only about 50 yards wide.

FANO.

Fano is in lat. 43°51' N., long. 13°0' E.

Population.—20,000.

Exports.—Corn and oil.

Accommodation.—The port is only suitable for small craft of about 6 ft. draught. Large vessels anchor about 1½ miles from the shore. Supplies for shipping are scarce.

FIUMICINO.

Fiumicino, in lat. 41°16' N., long. 12°15' E., is a small port at the mouth of the river Tiber. Steamers and small vessels drawing from 6 to 8 ft. can enter at Fiumicino, and, after having lightened to 5 ft., can proceed up the Tiber to Rome.

*Italy.***FORIO.**

Forio, in lat. $40^{\circ}43'$ N., long. $13^{\circ}51'$ E., is on the W. shore of the Island of Ischia.

Population.—About 4,000.

Accommodation.—There is 3 to 4 fathoms of water about a quarter of a mile off the shore. The anchorage is open to winds from N. to N.W. The harbour is good, but only suitable for small craft of about 5 ft. draught.

GAETA.

Gaeta, in lat. $41^{\circ}13'$ N., long. $13^{\circ}34'$ E., is 41 miles N.W. of Naples.

Population.—About 18,000.

Accommodation.—The port has 7 fathoms of water at the entrance, decreasing to 7 ft. at the quay; it is rather small, being about one cable square.

GALLIPOLI.

Gallipoli, in lat. $40^{\circ}2'$ N., long. $18^{\circ}0'$ E., is situated on the E. side of the Gulf of Taranto.

Population.—About 12,000.

Imports.—Flour, cereals, sulphur, and timber.

Exports.—Olive oil, wine and spirits, dried figs, etc.

Accommodation.—The total area of the water sheltered by the mole is 17 acres, the width at the entrance being 596 ft., and the depth $16\frac{1}{2}$ ft. The harbour, which is good and safe for vessels of any size, has an area of about 7 acres, with a greatest depth of 36 ft., and an average depth of 16 ft., and $3\frac{1}{2}$ acres with less depth. Vessels of 100 to 150 tons can come up to and load at the quays, which have a total length of 3,000 ft.; larger vessels are loaded by means of lighters. There is a good anchorage in from 7 to 8 fathoms for vessels that do not come into the port.

Masters, when ready to receive cargo, must give notice to the merchants a day before; lay-days for vessels, although ready for cargo, do not begin until they are in turn, should more than four vessels be loading at the same time.

Pilotage.—A pilot should be employed by strangers, as there is a rock in the entrance, with only 5 to 7 ft. of water. Inward pilotage: Vessels of not more than 100 tons, 25 lire; 101 to 200 tons, 30 lire; 5 lire additional for every 100 tons up to 900 tons; over 900 tons, 70 lire. Outward pilotage: Half the above rates.

Port Charges.—**Anchorage Dues**:—Steamers, 1 lira 40 c. per reg. ton; sailers, 80 c. per reg. ton. **Mooring and Unmooring**:—45 lire. **Entrance and Clearance at Customs**:—25 lire. **Labourers** on board, 5 lire per day. **Discharging Ballast**:—1 lira 25 c. per ton. **Interpreter or Shipbroker's Attendance**:—50 lire.

Fresh water can be had, but not of very good quality, and ships' biscuits and other provisions can be obtained at reasonable prices.

GENOA.

Genoa, in lat. $44^{\circ}24'$ N., long. $8^{\circ}55'$ E., is the chief commercial seaport of Italy.

Italy—Genoa (continued).

Population.—256,603.

Imports.—Oils, cotton goods, raw cotton, woollens, machinery, cochineal, indigo, grain, hides, sugar, coke, coal, wines, spirits, coffee, iron, colonial products, etc.

Exports.—Olive oil, hemp, flax, rice, vermicelli, fruits, cheese, steel, velvets, silk, damasks, gloves, flowers, paper, soap, marble, and jewellery in silver and coral.

Accommodation.—The harbour, which is semi-circular, is formed by two piers, with another circle forming an outer basin. It is fully and completely equipped with quay accommodation, hydraulic cranes, electric elevators, sheds, bonded warehouses, Custom House, wine warehouses, grain silos, petroleum, inflammable, and explosives depôt, etc.; and is thus able to give rapid dispatch of business. The largest vessels can enter the harbour, where they lie in perfect safety, in spite of the fact that a heavy swell rolls in when the wind is from the S.E., S., or S.W. There are no wet docks, vessels discharging into lighters or alongside the quays.

The length of quays and of the twelve jetties is 24,000 ft. The width of the entrance to the outer harbour is 2,032 ft.; the width of the entrance to the inner harbour is 1,109 ft.; the depth by the quays is from 29 to 33 ft. The total area of the harbour is 530 acres. There are four steam, sixty-seven hydraulic, eighteen electric, and ten hand cranes to lift from $1\frac{1}{2}$ to 10 tons; twelve electric bridge cranes to lift coal; a steel floating pontoon with a crane to lift 120 tons; five wood floating cranes to lift 60 tons.

The following are the dry and floating docks at Genoa :—

Bacino di Darsena . . .	294 feet long, 70 feet wide at the entrance, $19\frac{1}{2}$ feet on the sill.
" " No. 1 . . .	540 " " 82 " " " 31 " " "
" " No. 2 . . .	695 " " 59 " " " 27 $\frac{3}{4}$ " " "
Floating dock . . .	327 " " 82 " " " 19 $\frac{1}{2}$ " " "
" " (C. & S. type) . . .	285 " " 50 " " " 17 " " blocks.

The width of the floating dock (C. and S. type) can be increased if necessary by about 3 ft. The blocks also can be lowered, as they are 4 ft. high. The lifting power of this dock is 2,900 tons.

The Bacino di Darsena is within the Royal Arsenal and at the head of the harbour.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the semaphore at St. Benigno, half-mast 5 minutes before, and close up 3 minutes before the signal. The signal is made by the ball dropping at 10 a.m., noon, and at 3 p.m. Mid-European time, corresponding to 21 h. 0 m. 0 s., 23 h. 0 m. 0 s., and 2 h. 0 m. 0 s. Greenwich mean time, and 21 h. 35 m. 41.3 s., 23 h. 35 m. 41.3 s., and 2 h. 35 m. 41.3 s. local mean time. A gun is fired at Fort Castellaccio at the noon signal.

Pilotage.—Optional. The service is carried out by a corporation of pilots under the supervision of the harbour master. The pilots have their headquarters in a building erected on the Giano mole, where they are provided with a look-out tower.

The pilot boats are painted black with a white band running along the deck. On the funnel the letter "P" is painted white. At night they carry for purpose of distinction a red and a white light on the port side. The tariff charge by pilots is as follows : In-going—for vessels up to 1,000 tons net measurement, 8 c. per reg. ton; from 1,000 to 2,000 tons net measurement, 5 c. per reg. ton; 2,001 tons and upwards, 3 c., with a minimum of 32

Italy—Genoa (*continued*).

lire and a maximum of 160 lire. If by the captain's desire or on account of delay of the pilot (*force majeure* excepted) the ship only takes on the pilot within the Galliera mole, the tariff is reduced to one-half. At night the tariff is increased by 10 lire for every vessel up to 2,000 tons net measurement and by 20 lire for larger sizes. This tariff is based upon the net measurement in tons, serving as a basis for the charge for anchorage. Out-going—one half the rates for in-going, either by night or by day.

Within the port: For any movement or shifting of berth the tariff is one-third of the pilotage paid for entering. The pilots take vessels to be piloted at least one mile outside of the end of the Galliera mole.

Port Charges.—Anchorage Dues.—See **Italy**. **Towage:**—The usual charge for towing vessels to their berths is 50 lire for each tug employed for large steamers; 25 lire for each tug employed for small steamers; sailing vessels make their own arrangements. **Medical Inspection:**—Steamers over 500 tons, 5 lire; under 500 tons, 2 lire; sailing vessels, 2 lire. Every vessel has to pay a fee of 5 lire for the interpreter to the sanitary officer. **Bill of Health:**—Steamers over 500 tons, 5 lire; under 500 tons, 2 lire. Sailing vessels over 100 tons, 2 lire; under 100 tons, 50 c.; and under 50 tons, 25 c. **Sanitary Guards:**—Between sunrise and sunset, 3 lire each; between sunset and sunrise, 5 lire each.

Water.—Tank boats supply water to vessels in the inner harbour at a minimum charge of 4 lire per ton; in the outer harbour 5 lire per ton; when large quantities are required special arrangements are made. Water can also be obtained at nearly all the quays at the following rates:—For a quantity up to 10 tons, 5 lire per ton; from 11 to 50 tons, 50 c.; 51 to 150 tons, 45 c.; 151 to 300 tons, 40 c.; 301 to 500 tons, 35 c.; 501 to 1,000 tons, 30 c.; over 1,000 tons, 25 c. per ton. The water company also supply hose pipes, on loan, to vessels requiring water from the quays, the charges being:—Vessels berthed next the piers taking a quantity not exceeding 10 tons, 5 lire; 11 to 300 tons, 10 c. per ton; over 300 tons, 5 c. per ton. To vessels berthed in the second row the charge for water is the same as that given above, but for the use of the hose pipes the tariff is doubled.

Loading and Discharging.—The Labour Regulations fixed by the "Consortio Autonomo" (Self-Governing Harbour Board) of Genoa, and in force since January 1, 1907, consider all workmen employed in harbour work as port labourers subject to this authority, with the exception of those in the employ of the railways and building contractors, and the porters of the Custom House and free port dépôt (Porto Franco). They are all registered and enrolled by the "Consortio" according to categories, and unless enrolled cannot belong to any of the labour groups and associations working on the quays.

These are divided into two great classes, namely: (a) those engaged in discharging, loading, and carrying merchandise; and (b) workmen engaged in miscellaneous services.

Special regulations for the latter class have not yet been framed.

Class (a) again is sub-divided into—

- (1) Coal labourers.
- (2) Grain labourers.
- (3) General merchandise labourers.

(1) **Coal Labourers.**—These are now legally constituted as a co-operative body, subject to the "Consortio."

Italy—Genoa (continued).

The "Cooperativa" has to conform to the labour regulations and tariffs framed by the "Consorzio," and may be summoned at law to answer for damages and violation of contracts made with the merchants.

Working Hours.—Between May 1 and September 30, 6.30 a.m. to 5.30 p.m., with intervals from 8 a.m. to 9 a.m. and 12 noon to 1 p.m. Between October 1 and April 30, 8 a.m. to 5 p.m., with one interval from 12 noon to 1 p.m.

Work on holidays (including Sundays) is prohibited, except by special permission and in cases of recognized necessity. Night work (exceptionally permitted) begins one hour after the termination of normal working hours.

Holiday and night work entail double remuneration.

The rates for coal discharge, portorage, anthracite breakers, transshipment, weighing, overseeing and loading are as follows:—

DISCHARGING.

(a) From Steamers.

	Per ton Lire c.
1. Large and small coal of any quality, including cannel and boghead	0 64
2. Coke	1 30
3. Patent fuel, pig iron, bricks, and fire-clay	0 80
4. Patent fuel and bricks, lowered according to customary methods into lighters	0 20
5. Pitch, according to the decision of the Inspector of the "Gestori" (Harbour Board officials), according to weather and other conditions and circumstances—	
Minimum	1 80
Maximum	3 0

(b) From Sailing Ships.

In the event of application being made for discharge to be effected by the "Cooperativa," the latter is entitled to the above rates increased by 15 per cent.

PORTORAGE (EXCLUSIVE OF TRANSHIPMENT).

Quality of Coal.	From any Floating Vessel, End-on or Broadside (Steamer, Sailing Ship, Pontoon Lighter) of whatever Construction and Tonnage.				From Depôt.	
	Per Ton.	To Horse-drawn Cart within a Radius of 7 Metres from the Edge of the Quay (per Ton).	Within a Radius of 40 Metres from the Edge of the Quay and to a Height of 4 Metres, with an Allowance of 4 Metres for Oblique Directions.		To Truck (per Ton).	To Horse-drawn Cart (per Ton).
			To Depôt (per Ton).	To Horse-drawn Carts (per Ton).		
	Lire.	Lire.	Lire.	Lire.	Lire.	Lire.
Common coal	0.86	0.86	1.17 ¹	1.17 ¹	0.86	0.86
Boghead and cannel	1.36	—	1.66	—	1.26	1.26
Coke	1.21–1.41 ²	—	1.36–1.56 ³	—	—	—
Pitch—						
From steamer	1.05–1.35 ⁴	—	—	—	—	—
„ lighter	1.80–3 ⁴	—	—	—	—	—

¹ For quarter distances the tariff increases by 3 c. per ton for every metre of distance (Art. 1). For heights of deposit heaps over 4 metres the tariff increases by 20 c. per ton if brought from lighters (Art. 2).

² The rate of 1.21 lire refers only to portorage from steam or sailing ship to truck. That of 1.41 lire instead refers to said portorage from lighters or pontoons (of whatever build or tonnage).

³ The rate of 1.36 lire refers only to portorage from steamer or sailing ship to deposit heap. That of 1.56 lire refers to the said portorage from lighters.

⁴ To be determined in each case by the inspector of "Gestori" taking into account the season and other circumstances and conditions.

Sailing Ships End-on.—For ships moored end-on and having four hatchways, coal discharged from Nos. 1 and 2 will be paid for at the rate of 30 c. more per ton than the ordinary tariff (Art. 3).

Italy—Genoa (*continued*).

Patent Fuel, Bricks, Pig Iron, etc.—The cost of portorage is increased by 20 c. per ton for fuel bricks, fire-bricks, fire-clay, and pig iron.

TRANSHIPMENTS.

	Per ton. Lire c.
Coal—	
From floating vessel to floating vessel, including transhipments from steamers to sailing ships, and vice versa	0 71
Of bunker coal—	
From holds to bunkers	0 76
From lighters or pontoons of any form or tonnage to steamers or sailing ships	0 86
From steamer to sailing ship, if weighed	0 96
Coke—	
From steamer to sailing ship, or vice versa	1 21
Anthracite breakers (portorage and selection 10 c. per ton more than the ordinary rates of portorage)—	
Cobbles	1 00
Nuts	2 15

For work by the day, if required by the employer, the rate is 5 lire 20 c. per man per day.

Weighing Tariff.—Weighing is obligatory for all coal discharged by hand, and the “Cooperativa” is bound, on application, to furnish to shipowners and receivers schedules of weights for each day and vessel.

	Per ton. c.
Common coal	18½
“ “ from sailing ships	30
Cannel, boghead, and coke	35
Fire-bricks, patent fuel, pig iron, and fire-clay	26
Pitch	40

Overseers.—Coal receivers have the option of employing special overseers to check the work of the “Cooperativa,” at the following remuneration, which otherwise is payable to the overseers of the “Cooperativa” :—

	Per ton. c.
(a) Discharge	1½
(b) Portorage	4
(c) Weighing and delivery	1½

The “Cooperativa” is responsible for the due and proper discharge of coal at the average rate of 500 tons per working day, commencing from four hours after the vessel is moored in the inner harbour, when due notice has been given by the receivers. If circumstances permit, the “Cooperativa” may, by arrangement, discharge up to 1,000 tons per day, receiving 3½ c. per ton as extra remuneration for each day thus gained by the ship. Other contingencies to suit the convenience of the receivers are also provided for.

Loading.—For loading any steamer, without distinction of build or tonnage, by gangs of not more than 21 men, 1 lira 79 c. per ton.

The “Cooperativa” is bound to load at least 60 tons per gang and per day for the above remuneration.

If, owing to weather, it is a non-working day, the men are obliged to work for the above tariff if the ship provides proper awning and shelter, or this may be left to the “Cooperativa” to provide for an increase of 5 per cent. on the tariff rate.

General Rule.—For work done in zones commonly classed as non-working, the normal tariffs are increased by 20 per cent.

Work by the day is remunerated at the rate of 7 lire per day.

(2) and (3) **Grain and General Merchandise.**—The detailed rates for

Italy—Genoa (continued).

these workmen need not be given, as they are included in the following comprehensive rates, approved by the "Consorzio" on December 23, 1907, and which came into force on January 1, 1908 :—

DISCHARGING RATES FOR MERCHANDISE.

Articles.	Per	Lire c.	Stay in Lighters.	Porterage.
Quebracho wood, rag bales, tallow in casks, wool bales in general, hides in bales, jute bales, cotton in Surat bales, oil in barrels and casks, sulphate, tallow, pepper in sacks, coffee, cocoa, copra in bulk or in sacks, pilchards in casks, herring in barrels, stock fish, salt cod and salted goods in general, hoofs in sacks, seeds in sacks, planks, turpentine, machinery in cases or in pieces weighing less than 1½ kilos., rails and iron wares in general, pig iron, wine in casks, and all other goods not separately mentioned and capable of assimilation .	Ton	3 80	Included	Included
Dried hides in bulk	Mil.	45 0	"	Not included
Staves	Ton	3 0	"	"
Machinery and parts of machinery, and cases of machinery exceeding 1½ kilos.	"	8 0	"	Included
Cereals and pulse in sacks and phosphates in sacks	"	3 20	"	"
Oats, rice, and spelt in sacks	"	3 50	"	"
Zerons, indigo, silk bales and cocoons, waste, sponges, corks and cork	Bale	0 80	"	"
Earthenware in loose pieces, such as basins, ovens, sanitary ware, etc.	Piece	0 12	"	"
Hay, straw in pressed bales, and the like . .	Ton	7 0	"	"
Goods in bulk—				
Grain and pulse, phosphates, barytes and the like	"	2 0	"	"
Oats, barley, and spelt.	"	2 30	"	"
Pyrites	"	2 50	"	"
Cotton—				
Bales of cotton and waste from America, Smyrna, the East or home ports, with a right to fifteen days free of charge for lay-days of lighters, after which 5 c. per bale per day. Small bales are counted two for one, including watchman, coverings, and all other expenses	Bale	1 20	15 days free	"
Bales coming from Alexandria (Egypt) . .	"	0 75	Included	"
Home goods—				
Sundry goods in general	Ton	3 30	"	"
Corks in sacks, cork, hay, and straw in pressed bales	"	5 30	"	"
Zerons, indigo, silk bales, cocoons, waste, and sponges	"	0 70	"	"
Old iron and other iron wares, cases of machinery weighing less than 1½ kilos. . .	"	5 50	"	"
Wine in casks, sulphur, asphalt, and the like .	"	2 80	"	"

Rules for the Application of the Discharging Tariff.

1. The maximum percentage due to ships' agents is 25 c. per ton, and such percentage is included in the above-mentioned rates.

2. For colonial goods going to the free port dépôt (Deposito Franco), it is understood that porterage is a charge on the goods.

3. Under the above indicated rates discharging contractors are obliged to deliver the goods on the quay (or directly on trucks, if these are ready and available), under the sheds and on the open spaces pertaining to the "Consorzio."

Italy—Genoa (*continued*).

4. Discharging contractors have power to effect discharge on land even without any order from the receiver; should these not present themselves to accept delivery, the aforesaid contractors must hand over the custody of the goods to a special watchman, charging the said goods with all necessary expenses (watchman, space rent, and coverings, if required).

5. If the quays and sheds belonging to the "Consortio" happen to be encumbered, the contractor may effect discharge of the goods at the Darsena, in the free port depôt, or in other premises, after obtaining authorization from the agents of the "Consortio," who must in each case ascertain the necessity for such work.

6. Discharging contractors are responsible for losses and thefts up to the moment of depositing the goods on the quays, under sheds, and in other depôts.

7. If, under a condition in the bill of lading, the goods are to be received "alongside," and the receiver does not present himself in time to effect withdrawal, discharge will be undertaken by the ship agent, with an increase of 50 per cent. on the foregoing rates.

If, however, the receiver gives notice to the agent at least three days before the steamer's arrival that he does not wish to withdraw the goods direct the normal rates will be applied.

8. For discharge during night hours the existing wage will be followed.

"The above rates are inclusive of all operations and services required for the movement of merchandise from on board to the quay, sheds, and even directly on to railway trucks when these are ready and available.

"With the elimination of demurrage (for lighters), all expenses for watchmen, for coverings, for portorage of the second zone (that is, beyond 40 metres from the edge of the quay), are comprised in the unitary charge.

"No extra expense is admitted, so that the interested parties can know beforehand the cost of the operations, and be sure that they are not exposed to charges which are not easily or directly controllable."

Hydraulic Cranes.—The tariff for the use of the hydraulic cranes is as follows :—

(a) *By time*.—Movable crane of 1,500 kilos. (about 1½ tons) power: per hour, 2 lire 50 c.; per half-hour, 1 lira 50 c.; between 12 and 1, per hour 3 lire, per half-hour 1 lira 80 c.; at night, per hour 5 lire 10 c. Fixed cranes of three powers: Minimum power of 3,300 kilos., per hour, 6 lire; between 12 and 1, 8 lire; at night, 12 lire. Medium power of 6,600 kilos., per hour, 12 lire; from 12 to 1, 14 lire; at night, 21 lire. Maximum power of 10,000 kilos., per hour, 18 lire; from 12 to 1, 20 lire; at night, 30 lire. On holidays double the tariff.

(b) *Per ton*.—Movable crane of 1,500 kilos. (about 1½ tons) power: per ton 25 c.; between 12 and 1, 30 c. Fixed cranes of three powers: Minimum power of 3,300 kilos., per ton 50 c.; between 12 and 1, 60 c. Medium power of 6,600 kilos., per ton 75 c.; between 12 and 1, 1 lira. Maximum power of 10,000 kilos., per ton 1 lira; between 12 and 1, 1 lira 40 c.

The tariff applied is according to the maximum weight per load actually employed. Fractions of tons are reckoned as whole tons. A variation of 10 per cent. over or under is permitted in the declared weight.

Important to Shipmasters.—Shipmasters visiting the port of Genoa should conform to the following rules :—

1. Immediately on arrival to report to the health and police office.

Italy—Genoa (continued).

2. To have an exact manifest of the cargo and ship's stores, taking care to declare every particle of salt, tobacco, sugar, coffee, liquors, matches, and perfumes (including that in possession of the crew), as any omission, even if accidental, is punished by a heavy fine.

3. To note their protest (if any) to the authorities within 24 hours after taking pratique. This should be done by all masters desiring to avoid having disputes with their consignees.

4. If the vessel is not discharged within the time stipulated by charter party, the master should, on the last lay-day, protest against the consignees.

Pro Forma Charges on a steamer of 1,498 tons reg., from England, with 2,904 tons of coal, clearing in ballast for the Black Sea:—

	Lire	c.
Mooring and unmooring	75	00
Pilotage from and to sea	157	35
Metreage on cargo at 10 c. per ton	290	40
Fireguard	18	00
Anchorage dues at 1 lira 40 c. + 5 c. local charge	2,172	10
Sanitary fees	4	20
Foreign bills of health	41	20
Interpreter, health office	3	00
Consular fees	19	80
Custom House formalities, B.L. stamps, etc.	76	00
Hire of baskets, shoots, etc.	250	00
Discharging cargo at 64 c. per ton	1,858	56
Agency commission, £5	127	00
	5,092	61 = £200 10s. 0d.

GIARDINI.

Giardini, in lat. 37°52' N., long. 15°18' E., is on the E. coast of the island of Sicily, about half-way between Messina and Catania.

Population.—3,600.

Exports.—Wines and hemp.

Accommodation.—The anchorage is in 10 fathoms, on a bottom of gravel, about 1,000 yards from the shore, gradually decreasing to 3 fathoms within 100 yards. It is open to all winds from E. round to S. There is no mole or pier.

GIRGENTI.

Girgenti is in lat. 37°20' N., long. 13°35' E., the town being situated on a mountain, at a distance of about 4 miles from the sea. Porto Empedocle is the harbour and loading place, and there are all the stores and residences of the Maritime and Custom House authorities.

Population.—Girgenti, 26,000. Porto Empedocle, 14,000.

Imports.—Coal, timber, superphosphates, sugar, coffee, spirits, rice, petroleum, and chalk.

Exports.—Sulphur, corn, almonds, salt, sumach, oil, and locust beans.

Accommodation.—The harbour is secure and commodious. Steamers and sailing vessels can load up to 21 ft. outside, and to 19 ft. inside the port, which is formed by two breakwaters, and is well sheltered from all winds. The entrance is from S.S.W., and there is a depth of 23 ft. The depth of water is always the same, no tides rising here. Vessels moor to the breakwater, and cargo is loaded and discharged by lighters

Italy—Girgenti (*continued*).

carrying from 4 to 5 tons. Steamers can load 500 tons, and sailing vessels 200 tons, per day. On arrival, every master has to present himself at the pratique office, which stands close to the lighthouse, produce the bill of health, log books, and fulfil all the usual formalities. Any vessel can throw ballast outside the harbour, but must have the harbour master's permit, as he will indicate the ground and send a survey on board.

Pilotage.—Vessels entering the harbour should employ a pilot; on hoisting the pilot flag the pilot boat goes out from the harbour for 2 miles from the W. to the E. to meet the vessel. Pilot assistance is also required to moor the vessel. Steamers, in and out, 73 lire up to 1,000 tons reg., over 1,000 tons reg., 83 lire 75 c.; sailing vessels, large, 112 lire 50 c.

Port Charges.—Anchorage Dues.—See **Italy**. **Mooring** :—50 lire. **Clearance Fees** :—50 lire. **Towage** :—Sailing vessels, 15 lire. **Boat Hire** :—5 lire per day. **Consular Fees** :—10 lire. **Ballast** :—2 lire per ton. **Labour** :—5 lire per day; 1 lira per ton. **Discharging Ballast** :—1 lira 80 c. per ton; survey, 4 lire per day. **Loading** :—Sulphur, 30 c. per ton. **Discharging** :—70 c. per ton. **Brokerage** :—£5 5s.

Pro Forma Charges on a steamer of 1,600 reg. tons, with a cargo of coal in and ballast out, drawing 19 ft. loaded :—

	£	s.	d.
Harbour dues at 1 lira 45 c. per reg. ton	92	16	0
Brokerage	5	5	0
Pilotage in and out, including mooring and unmooring	5	0	0
Boat hire, 8 days at 5 lire per day	1	12	0
Watchman, 8 days at 5 lire per day	1	12	0
Four winchmen, 8 days at 5 lire per day	6	8	0
Harbour guards to the fires, 3 lire per night	1	0	0
	<hr/>		
	£113	13	0

GRANATELLO.

Granatello, in lat. 40°50' N., long. 14°22' E., is about 4 miles S.E. of Naples. It is the seaport of the towns of Portici and Resina, which are populous places about a mile inland.

Accommodation.—This is a small and ill-protected port. The harbour cannot accommodate any but small steamers, and it is principally frequented by coasting vessels. The maximum depth of water is about 4 fathoms, shallowing towards the shore, but the port is too small to accommodate ordinary steamers.

LEGHORN.

Leghorn, in lat. 43°33' N., long. 10°19' E., is one of the chief seaports in the Mediterranean.

Population.—125,080.

Imports.—Carbonate of soda, coal, coffee, cotton, fish, hides, iron, steel, hardware, jute, mineral oil, spirits, sugar, sulphate of copper, tobacco, wheat, and wool.

Exports.—Boracic acid, borax, candied fruit, coral, eggs, hemp, hides, marble and alabaster, mercury, pumice stone, olive oil, rags, sienna earth, soap, straw hats, wax, and wine.

Italy—Leghorn (continued).

Accommodation.—The Mediceo harbour has an area of 52 acres and a depth of 21 to 22 ft. at the entrance. Vessels load and discharge by lighters. The Mandraccio Darsena has an area of 12 acres. There is 1,052 ft. of quayage, with 18 to 19 ft. of water alongside, to which vessels can moor. Loading and discharging is done by lighters and pontoons. In the Mediceo harbour there is a quay 1,100 yards long, with 20 to 24 ft. alongside; vessels of 3,500 tons can be berthed. There is also a quay (Diga Rettilinea) 1,051 ft. long, which can be reached by vessels drawing 19½ ft. There is accommodation for vessels discharging timber and petroleum. There is a loading quay near the Capitaneria 656 ft. long, with 26½ ft. of water alongside. It is provided with four hand cranes to lift from 2 to 6 tons per hour. Vessels may moor to the quay and load and discharge by lighters. There is good anchorage throughout the port, and no bar. There are four steam pontoons; four floating cranes to lift 150 to 160 tons; six cranes to lift from 2 to 4 tons; several staithes to ship coal from 30 to 40 tons per hour. There is a steam crane to lift from 50 to 60 tons at the shipbuilding yard. There is a large shipbuilding and engineering yard here, where all repairs can be effected. There is also a dry dock 451 ft. long, 71¾ ft. wide at the entrance, and 23 ft. on the sill. There are two patent slips worked by hydraulic power to lift 1,500 tons each. The railway runs on the quay at the Diga Rettilinea. The average amount of coal discharged per day from a vessel is 500 tons. The "custom" of the port is 100 tons per hatch. Vessels moor with their own chains, 30 to 50 fathoms of chain with the anchor ahead. A boat is employed to carry out the anchor and assist in mooring. Vessels drawing over 20 ft. require lightering in the outer harbour, but the expenses of shifting are at the receivers' charge.

Pilotage.—Optional. If a qualified pilot is employed the rate is: Inwards, 10 c. per reg. ton; outwards, 7½ c. per reg. ton. If, however, the captain makes an arrangement before entering the port both inwards and outwards will be charged 13½ c. per reg. ton. Pilotage for movements in the port, 3 c. per reg. ton, with a minimum charge of 15 lire, and a maximum of 30 lire. Tonnage taken as certified by ship's papers. Pilots are bound to render assistance within the zone comprised between the Meloria Banks and the Mediceo, or inner, harbour. From outside the Meloria an additional fixed rate of 20 lire is due for every vessel, of whatever tonnage.

Port Charges.—Anchorage Dues.—See *Italy*. **Ballast:**—3½ lire per ton put on board; discharging the same by the crew, 1 lira 25 c. per ton. **Boat Hire:**—Varies according to position and necessity, say 5 lire per day. **Towage** is not necessary unless for the purpose of shifting, when charges are paid by receivers. **Stowing:**—Marble blocks, 3 lire 50 c. per ton, including crannage; other goods, 1 lira 50 c. per ton. Water, 3 lire per ton for boilers, 3 lire 50 c. for drinking. Bread, 23 lire per cwt.; beef, 90 lire per cwt. **Consular Fees:**—Every vessel leaving port requires a certificate from the local authorities; the charge for this is 5s.; bill of health, 10s. **Quarantine Guard:**—3 lire per day, 4 lire per night. **Labour:**—5 to 7 lire per day of 8 hours. **Mooring:**—25 lire; unmooring, 25 lire. **Brokerage:**—Steamers, £5 5s. **Agency:**—On arrival, a sailing ship is generally boarded by an interpreter from a ship-chandler, who takes charge of the ship's papers, manifest, list of provisions, etc., and does all the ship's business, procuring freight, etc. The charge for this is from £2 to £4, according to the size of the vessel.

Italy—Leghorn (*continued*).

Dry Dock Charges :—Under 400 tons burden, 80 c. per ton, first day ; 40 c. every succeeding day for sailing ships and screw steamships ; paddle-ships 4 lire per h.p. first day, 2 lire every other day. The above rates are reduced by one half for every ton exceeding 400 tons.

Pratique.—A vessel upon arrival can go direct to her berth, and from there be admitted to pratique, there being now no necessity to anchor first at the outer breakwater, as was formerly the case.

Special Regulations.—Owing to the stringent regulations of the Italian Government with regard to tobacco and salt forming part of a ship's stores, attention is called to the following :—

NOTICE TO SHIPMASTERS ENTERING THE PORT OF LEGHORN.

Shipmasters are advised to be most careful, in preparing their list of stores, to insert the exact weight of tobacco, salt, sugar, coffee, tea, number of cigars, quantity of spirits, and matches. They are also particularly requested to give clear orders to their crews to bring aft all the tobacco and salt in their possession, before the Custom House officers proceed to search the ship. Seamen and engineers should be made to understand that, in the case of any concealment, they will have to pay the heavy penalties prescribed by the Italian ordinances, the lowest fine being 71 lire. Crews are warned that even the smallest attempt at smuggling will be almost certain to result in a heavy charge on their wages. A small quantity of the ship's tobacco is now left out from seal, for use of the crew during the first forty-eight hours of the ship being in port.

Pro Forma Charges on a steamer of 1,000 tons register, with general cargo from the United Kingdom, and clearing outwards for other Italian ports—lying, say, 24 hours in port :—

	Lire	c.
Pilotage at 10 c. per ton in	100	00
„ out, if taken	75	00
Mooring and unmooring	50	00
Waterman and boat hire	10	00
Guard, one night	4	00
Anchorage at 1 lira 40 c. per ton	1,400	00
Manifest inwards	10	00
Bills of lading, each	0	60
Manifest outwards	10	00
British consular fees	9	70
Clearing agent for managing ship's business at Custom House, including guarantee in case of error in manifest and insuring quick dispatch	30	00
Interpreter at Custom House	3	00

1,702 30 = £67 0s. 5d.

LICATA.

Licata, in lat. 37°5' N., long. 13°56' E., is about 26 miles S.E. of Girgenti.

Population.—30,000.

Imports.—Coal and timber.

Exports.—Sulphur, almonds, barley, and beans.

Accommodation.—There is a good sized, safe, artificial harbour, with 19 to 22 ft. of water, inside the E. mole. Seaward of the E. and W. moles, a detached breakwater (covering the harbour entrance from S.E. to S.W.), 800 yards long, is in course of construction ; about two-thirds is nearly finished. The usual anchorage for steamers and sailing

Italy—Licata (*continued*).

vessels is inside the E. mole, S.E. of the town; 19 to 22 ft. of water, mud and sand bottom. This anchorage is quite safe from any gale blowing outside if properly moored with cables and ropes, but pending the completion of the breakwater lighters cannot reach the shore when the wind is from S.W. through S., to S.E., or direct W. Ships drawing over 19 ft. of water can complete loading by shifting and mooring at the breakwater (inside), where there is about 29 ft. of water. Licata harbour will be one of the best ports on the southern coast of Sicily as soon as the breakwater is completed and properly dredged. On the E. mole and at the breakwater, proper strong mooring-blocks and rings have been fixed for ships to make fast. **Coal** can be discharged at the rate of 250 tons per weather working day; in summer, 300 might be done. **Sulphur** can be loaded at the rate of 500 to 1,000 tons per day; for this latter quantity dispatch money might be asked at the rate of £6 to £8 per day. Steamers calling for coal can ship 200 to 300 tons in six hours; average cost of coal, 27 lire per ton f.o.b. There is a floating steam crane to lift 25 tons (the property of the company doing the harbour works); the other fixed cranes are at present employed in the harbour works. Small damages to vessels can be repaired. Manifest must be ready and delivered immediately on free pratique, signed by the master, and must be exact in the weights and measures of spirits, tea, coffee, sugar, petroleum, matches, tobacco, and cigars.

Pilotage.—A pilot is necessary before entering the harbour, owing to the construction of the breakwater; inward and outward fees, 75 lire, and only Government voucher to be recognized if a higher fee is claimed.

Port Charges.—Anchorage dues at 1 lira 40 c. per register ton, Government official voucher only to be recognized. Custom House clearance, about 40 lire, in and out. **Ballast:**—1 lira per ton; beef, 1 lira per lb.; water, 15 lire per ton. It is strictly prohibited to throw ballast overboard in the harbour. **Stevedoring.**—For taking cargo, 3*d.* per ton, unless bound by charter at the usual rate of 1 lira per ton. No commission is due for collecting freights. **Boat Hire:**—5 lire per day. **Sanitary Interpreter's Fee:**—3 lire. **Mooring and Unmooring:**—40 lire. **Fire Guard:**—Compulsory; 3 lire per day.

LIPARI.

Lipari, on the E. side of the island of the same name, is in lat. 38°28' N., long 14°57' E.

Population.—Island, 20,000.

Accommodation.—Vessels can moor with anchors out in 13 to 14 fathoms, with sterns fast on shore, and 18 ft. of water below them. The bay or harbour has deep water and good holding ground; but as there is no mole or pier it is not perfectly safe, being open to all winds except those from the W.

LONGONE.

Longone, in lat. 42°45' N., long. 10°23' E., is on the E. coast of the island of Elba.

Accommodation.—The anchorage in 6 fathoms near the mole is snug, but open to E.S.E. winds, which blow right in.

For further particulars, see **Rio Marina**.

*Italy.***MADDALENA ISLAND.**

Maddalena Island lies off the north-eastern coast of Sardinia, in lat. $41^{\circ}15' N.$, long. $9^{\circ}27' E.$

Population.—12,000.

Imports.—General merchandise.

Export.—Worked granite.

Accommodation.—The port at La Maddalena is both large and safe. The largest modern ships can enter conveniently and in all weathers. The bottom affords good anchorage, whilst the variation caused by the tide is quite insignificant. There are six tugs belonging to the Italian navy, which may be hired from the authorities should they be needed. Small repairs can be executed. There are floating sheers to lift 140, 20 and 15 tons. There is a floating dock for torpedo boats only.

Pilotage.—Optional. There are no licensed pilots, but this service is performed by the fishermen and seamen of the locality, who are well acquainted with the estuary. When their services are requisitioned the charge in and out is about 50 lire.

Port Charges.—Anchorage Dues.—See *Italy*. **Ballast:**—Alongside, 3 lire per ton for gravel. **Boat Hire:**—5 lire per day.

Pro Forma Charges on a steamer 2,744 net. reg. tons, from the United Kingdom, with 1,500 tons general merchandise:—

	Lire	c.
Anchorage dues, 1 lira 40 c. per reg. ton	3,841	60
Discharging 1,500 tons at 2 lire 50 c. per ton	3,750	00
Sanitary visit	15	00
Pilotage, in and out	50	00
Brokerage	125	00
Customs and clearance	50	00

7,831 60 = £308 6s. 8d.

MALAMOCCHO AND VENICE.

Malamocco, in lat. $45^{\circ}20' N.$, long. $12^{\circ}22' E.$, is about 7 miles S. and the principal entrance of the port of Venice, which is in lat. $45^{\circ}25' N.$, long. $12^{\circ}20' E.$

Population.—157,840.

Imports.—Coal, iron, grains, phosphate, slag, pyrites, rice, raw cotton, coffee, sugar, indigo, and manufactured goods.

Exports.—Timber, hemp, beads, building material, cement, paper, artistic objects, straw, bricks, brooms, burnt ore, yarns, etc.

Accommodation.—Ships with a draught up to 28 ft. can enter the canal at Malamocco and proceed without difficulty to the Stazione Marittima at Venice, where discharging generally takes place. The Stazione Marittima is fitted with electric light. The quays here are 3,400 ft. long and, though somewhat wanting in equipment, are being improved and enlarged. There are three cranes to lift 20 tons; one crane to lift 10 tons, and others to lift $1\frac{1}{2}$ to 2 tons. There is another landing place at Giudecca Island with 5,900 ft. of quayage, but few steamers use it now. Grain stores (silos), with an available depth of 27 ft. for steamers coming alongside, are fitted with elevators, and can take about 2,000 tons per day out of four

Italy—Malamocco and Venice (continued).

holds. At the silo quays three vessels can discharge at once. The silos are at the Stazione Marittima, and are fitted with electric light.

In the Giudecca channel there is a floating dock (C. and S. type) 365 ft. long, 61 ft. wide at the entrance, 22 ft. on the blocks, and with a lifting power of 4,500 tons.

The Government have two dry docks. No. 1 is 324 ft. long, 80 ft. wide at the entrance, and 25½ ft. on the sill. No. 2 is 295 ft. long, 59 ft. wide at the entrance, and 19½ ft. on the sill. The Government dockyard build ironclads to 13,250 tons. They have a hydraulic crane to lift 156 tons and another to lift 30 tons. There is a private firm which undertakes all repairs, and has a crane to lift 40 tons.

The coast near Malamocco is very low, but it is well lighted. Vessels of considerable draught usually employ a boat at Alberoni, just inside the canal, at a cost of 25 lire to attend to the ropes and the lines on the way up to Venice.

Pilotage.—Pilotage is compulsory from Malamocco or Lido to Venice, and vice versa, the charge being 15 c. per ton net register. From the sea to the port pilotage is not compulsory. Should such assistance be employed the charge is : From a point more than 3 miles from the breakwater, 6 c. per net reg. ton ; less than 3 miles from the breakwater, 4 c. per net reg. ton. Captains calling for the first time are advised to employ a pilot.

Time Signals.—Chronometers can be checked at Venice. A red ball is hoisted on the Patriarcale Observatory two minutes before the signal, and dropped at noon Mid-European time, corresponding to 23 h. 0. m. 0 s. Greenwich mean time, and 23 h. 49 m. 21 s. local mean time.

Port Charges.—Anchorage Dues.—See *Italy*. **Bill of Health :—**Ships above 100 reg. tons, 3 lire ; under 100 reg. tons, 1 lira. **Water :—**1 lira 50 c. per ton. **Towage :—**From 500 to 600 tons, from Malamocco to Stazione Marittima, 100 lire ; if taken at sea, from 120 lire to 150 lire, according to distance. **Stowage :—**Sailing vessels—battens, 1 lira 10 c. per ton ; beams, 9 lire 50 c. per 1,000 pieces. Steamers—planks, 8 lire 50 c. per 1,000 pieces ; beams, 10 lire 50 c. per 1,000 pieces. **Provisions** of all kinds can be had.

TARIFF OF LABOURERS, AS ESTABLISHED BY THEIR SOCIETY.

	Sailing ships.		Steamers.	
	Lire c.		Lire c.	
Coal, patent fuel, and bricks, per ton	0	50	0	70
Coke, per ton	1	15	1	30
Coal dust, small	0	50	0	60
Rails	0	90	0	90
Cast and pig iron	—	—	0	90
Vesuvian ashes	0	45	0	65
Pitch, loose	1	25	1	75
Resin in barrels	0	70	0	75
Sulphur and carbonate of soda	0	45	0	65
Rice	0	45	0	60
Grains	0	45	0	55
Oats and barley	0	60	0	65
Wood, deal battens, per ton	—	—	1	10
„ for building, per ton	1	25	1	25
Stones, bricks, and tiles, per ton	0	80	0	75
Cotton in bales, rags	0	90	0	90
Oil, grains, in sacks ; sugar, coffee, and other goods, packed	0	45	0	55
Coal placed in bunkers, per ton	—	—	1	00
Small iron	1	80	1	60

When steam winches are not used, 10 per cent. additional. Night work (for only 8 hours), 50 per cent. additional. Sunday and holiday work, 20

Italy—Malamocco and Venice (continued).

per cent. additional. If the ship discharges beyond the point of the Garden of Alberoni, 25 per cent. more. The discharge in the Royal Arsenal is reckoned as if made in the city. The stevedores provide the tubs for the discharge of coal and grains at the following charges :—

Up to	300 tons cargo									Lire.
From	500	"								20
										40
Above	1,000	"								60 maximum.

In order to facilitate the work, a man is engaged to direct the labourers at 5 c. per ton of cargo.

Fire Watchman.—For each whole day, 5 lire ; by night only, 3 lire ; by day only, 2 lire.

Commissions.—No commission is charged upon the freight of entry when it is not so stated in the charter party. Upon the outward freight the shipbroker's charge is 4 to 5 per cent.

Consignees.—The usual fee of recommendation for foreign sailing ships is £3 3s. ; for steamers, £5 5s. (including entry and clearance in the Custom House and attendance).

Running Days.—These begin as soon as the steamer is ready to discharge and entered in the Custom House. In order to establish the working days the port office must keep a journal of the conditions of the weather, so as to remove controversies between captains and receivers.

Custom House.—Captains coming from abroad must take care to have their manifest duly filled up with accuracy as to quantity of cargo destined to the port, ship's provisions (more especially spirits), coffee, sugar, tea, tobacco on board, an error or mistake causing serious fines. The manifest must be ready outside the port in case the vessel is boarded by the Customs coastguard. Forty-eight hours after sealing the provisions by the Customs officers, no foreign tobacco is allowed to be used. In the event of a search, if tobacco is found, even in very small quantities for the use of the crew heavy fines are imposed.

Discharging Cargo.—The discharge of grain is made, when going into warehouses, by throwing the corn on deck ; it is then carried by porters in bags and landed, where it is weighed in the presence of Customs officers. During the day various soundings are made so as to establish the mean weight to the hectolitre, to form a basis of average for the freight. According to commercial and maritime customs of the Venetian port, approved by the Chamber of Commerce, the following averages are in force :—

100 Imperial quarters are equal to	.	.	.	.	.	hectolitres	291.55
100 loads of Marseilles are equal to	.	.	.	.	.	"	160.00
100 chetverts of Odessa are equal to	.	.	.	.	.	"	208.00
100 staia of Venice are equal to	.	.	.	.	.	"	83.30
100 ardeb of Egypt (grain) are equal to	.	.	.	.	.	"	183.33
1 pood of Russia is equal to	.	.	.	.	.	kilos.	16.25
1 English cwt. is equal to	.	.	.	.	.	"	50.75
1 English ton is equal to	.	.	.	.	.	"	1,015.00

Coal is unloaded at the Stazione Marittima on to railway wagons, and weighed by the railway company. In other parts of the port coal is weighed on deck in scales. It is advisable for ships' officers to superintend this, so as to avoid short delivery. Steamers usually employ clerks for the discharge, at 5 lire to 6 lire per day.

*Italy.***MANFREDONIA.**

Manfredonia is in lat. $41^{\circ}38'$ N., long. $15^{\circ}56'$ E.

Population.—About 13,000.

Imports.—Coal, coffee, sugar, spirits, wood for building, etc.

Exports.—Salt, corn, olive oil, dried fruits, etc.

Accommodation.—The harbour is small, and can receive vessels of about 17 ft. draught; small steamers of $11\frac{1}{2}$ ft. draught can coal alongside the quay. The anchorage in the roads, in $5\frac{1}{2}$ to 6 fathoms, muddy bottom, is one of the best on the Italian coast of the Adriatic.

Fresh provisions, water, vegetables, and fish can be obtained at moderate prices. Coal can also be supplied. Coal is discharged at the rate of 300 tons per day.

Pilotage.—Not compulsory.

Port Charges.—**Anchorage Dues**:—2 lire per reg. ton. **Stevedore**:—Discharging coal, 1 lira per ton. **Boat Hire**:—30 lire. **Customs Charges**:—Reporting inwards, and clearing outwards and attendance, 100 lire. **Consular Fees**:—2s. 6d. **Ballast**:—1 lira per ton, if in the harbour; 1 lira 50 c. per ton if in the roads. **Brokerage**:—4 per cent. on freight.

Ballast must be thrown overboard before anchoring, or else discharged by boats.

MARSALA.

Marsala, in lat. $37^{\circ}47'$ N., long. $12^{\circ}27'$ E., is on the W. coast of Sicily about 16 miles S.S.W. of Trapani.

Population.—57,567.

Imports.—Staves, spirits, hoop-iron and coal.

Exports.—Wine, corn, oil, salt, soda, and cattle.

Accommodation.—The harbour is large and safe. It is protected by a sea-wall, or mole, about a mile long. The depth of water in the harbour varies from 12 to 15 ft., with 13 ft. at the entrance. Vessels generally lie outside and are loaded and discharged by lighters.

Pilotage.—Strangers should not attempt to enter without a pilot, the channel being very narrow; a pilot is always on the look out, and goes off (weather permitting) as soon as the jack is hoisted.

Quarantine.—Although there is no lazaretto, vessels are, on occasions, allowed to perform quarantine.

MAZZARA.

Mazzara, in lat. $37^{\circ}37'$ N., long. $12^{\circ}35'$ E., is about 11 miles S.E. of Marsala.

Population.—18,000.

Exports.—Corn, pulse, wine, fruit, fish, barilla, madder, oil, cheese, and ferronosio favara.

Accommodation.—The harbour of Mazzara is only available for boats and small craft. Large vessels anchor in the roadstead in 10 fathoms. This roadstead is quite exposed, and shipmasters should always hold themselves in readiness to slip anchor and proceed to sea.

Italy—Mazzara (*continued*).

Pro Forma Charges on a vessel of 100 tons from Palermo in ballast, cargo out :—

	Lire	c.
Anchorage dues	80	00
Custom House	3	80
Labourage, loading cargo	300	00
Discharging ballast	50	00
	433	80 = £17 1s. 7d.

MESSINA.¹

Messina is in lat. 38°10' N., long. 15°33' E.

Population.—167,800.

Imports.—Cotton and woollen manufactures, colonial goods, coal, hides, iron, copper, corn, grain, petroleum, spirits, fish, and rice.

Exports.—Essence of oranges, lemons and bergamot, green and pickled fruit, olive oil, silk, argols, cream of tartar, lemon juice, wine, linseed, salt fish, canary seed, almonds, and hazel nuts.

Accommodation.—The water area of Messina harbour is 193 acres. The depth at the entrance is 59 to 184 ft., and at the quayside 22 to 82 ft. There is 5,906 ft. of quayage, with four cranes. The harbour is easy of access for steamers, but not for sailing vessels. Railway lines run along the quays and connect with the main lines of Sicily and through the ferry boat with the mainland. The quays are lit by electricity. The port is open to the N.W., the entrance being 500 yards wide.

There is no lazaretto here for the reception of either passengers or goods. Vessels arriving from infected places have to perform quarantine at Avanci Bay; those from suspected ports undergo medical visit, and are ordered on to Avanci Bay if the visit is unsatisfactory.

There is a dry dock here 360 ft. long, 80 ft. wide at the entrance, and 28 ft. on the sill.

RATES.

(a) Steamers of less than 400 tons burden—

	Lire	c.
First day	320	00
Every following day	160	00
Props, diver, and stages	70	00

(b) Steamers of the burden of more than 400 tons, one day ingress—

	Lire	c.
For the first 400 tons	320	00
For every ton over 400	0	40

For every following day—

	Lire	c.
The first 400 tons	160	00
For every ton over 400	0	20
Expenses for propping, diver, and stages	100	00

(c) Sailing vessels of the burden of not more than 250 tons—

	Lire	c.
For one day	125	00
Expenses for propping, diver, and stages	70	00

¹ Owing to the earthquake which partially destroyed Messina, Reggio, and adjacent ports in December, 1908, the above information can no longer be regarded as reliable. As soon as fresh information is available it will be issued to subscribers in the form of a supplement.

Italy—Messina (continued).

(d) Sailing vessels of the burden of more than 250 tons, for every day—

	Lire	c.
The first 250 tons	125	00
Every ton above 250	0	25
Expenses for propping, diver, and stages	80	00

These charges can be reduced if captains make arrangements through Lloyd's agent.

Repairs to hull and machinery can be executed.

Time Signals.—Chronometers can be checked. A red and white chequered ball is hoisted on the tower of the observatory at 11.55 a.m., and dropped at noon Mid-European time, corresponding to 23 h. 0 m., 0 s. Greenwich mean time, and 0 h. 2 m. 13.2 s. local mean time. A gun is fired simultaneously.

Pilotage.—

Vessels from	1 to 100 reg. tons, per reg. ton	Lire
" " 101 to 200 " "	" "	20
" " 201 to 300 " "	" "	30
" " 301 to 400 " "	" "	35
" " 401 to 500 " "	" "	40
" " 401 to 500 " "	" "	45

Vessels over 500 reg. tons pay 3 c. per reg. ton additional to the 45 lire on the first 500 reg. tons.

Port Charges.—British Consular Fee:—Ship's clearance, 5s.; endorsement on ship's articles, 2s. 6d.; noting protest, 7s. 6d.; bill of health, 10s. Entering ship and manifest at Custom House, 10 lire; including stamps and forms. Stamps on each B.L. inwards, 1 lira. 20 c. Health office interpreter, 5 lire. Italian bill of health for steamers above 500 reg. tons, 5 lire; under 500 reg. tons, 2 lire. Application for Custom House permit to ship stores, 60 c. Skids for steamers, 25 lire; for sailers, 10 lire. **Ballast:**—1 lira 50 c. per ton brought alongside. **Discharging Ballast:**—Sand, 1 lira; shingle or stone, 1 lira 30 c. per ton. **Water:**—5 lire per ton; for boilers, 4 lire per ton. **Quarantine Expenses:**—5 lire for doctor's visit, and 2 lire 50 c. per day for sanitary guard. **Interpreter's Fee:**—Attending and doing ship's business, 60 to 75 lire; steamers, 25 lire. **Brokerage:**—2 per cent.; commission 3 per cent. **Anchorage Dues:**—See Italy.

Vessels wind-bound, or calling for orders, may take pratique without paying any of the above dues.

MILAZZO.

Milazzo, on the N. coast of Sicily, is in lat. 38°12' N., long. 15°13' E.

Population.—10,000.

Imports.—Grain, coal, machinery, petroleum, phosphates, and pyrites.

Exports.—Wine, fruit, red argols, and lemons.

Accommodation.—Vessels drawing 20 ft. can enter the harbour, which is protected by a mole, and is quite safe.

Vessels are moored with the best bow anchor ahead and 50 fathoms chain, while another chain is made fast astern. This is a good coaling station; moderate prices and quick dispatch. There is a hand crane to lift 3 tons.

Italy—Milazzo (*continued*).

Pilotage.—As soon as a vessel is seen approaching the port a pilot comes off; 50 lire is the maximum charge.

Port Charges.—Harbour Dues:—1 lira 45 c. per reg. ton. **Discharging Ballast:**—1s. per ton. **Interpreter:**—40s. A vessel of 100 tons register would pay about £15, including harbour dues, etc.

MOLA.

Mola, in lat. 41°4' N., long. 17°8' E., is 13 miles S.E. of Bari.

Population.—12,000.

Exports.—Oil, cotton, and carobs.

Accommodation.—Mola is chiefly frequented by coasters drawing 6 ft. In fine weather large vessels can anchor in 5½ fathoms on hard mud, about half a mile from the town.

MOLFETTA.

Molfetta, in lat. 41°13' N., long. 16°38' E., is 16 miles W.N.W. of Bari.

Population.—40,135.

Exports.—Wine, soap, oil, and almonds.

Accommodation.—The port, formed by a mole, is sheltered from all winds except the N. A sandbank, opposite the entrance, forms a natural breakwater. Alongside the quay there is 12 to 13 ft. of water, where vessels can load. An extensive addition to the breakwater is in course of construction, and there is now from 14½ to 17 ft. of water inside.

MONOPOLI.

Monopoli, in lat. 40°57' N., long. 17°18' E., is about 26 miles S.E. of Bari.

Population.—22,000.

Imports.—Coal, cereals, iron, glass, timber, etc.

Exports.—Oil, wine, almonds, carobs, soap, etc.

Accommodation.—The port is a small inlet with three little coves branching from it; the first has been enlarged by a mole. Vessels drawing 13 ft. can get alongside the quay, larger vessels anchor abreast the town in 26 ft. A new breakwater from Punta Incuratore eastwards is now in course of construction; it is at present 200 metres (655 ft.), and when finished will be 300 metres (982 ft.) in length.

Pilotage.—Not compulsory; 101 to 200 tons, 25 lire; 500 tons, 50 lire.

Port Charges.—Anchorage Dues.—See **Italy**.

NAPLES.

Naples is in lat. 40°50' N. long. 14°15' E.

Population.—About 600,000.

Imports.—Coal, grain, wood, fish, copper, lead, iron, cotton, etc.

Exports.—Wine, alcohol, macaroni, oil, dried fruits, etc.

Italy—Naples (continued).

Accommodation.—The harbour is sheltered by breakwaters, and is available for the largest vessels. The breadth of entrance is 1,500 ft. The depth of water varies from 26 to 50 ft. As soon as the outer or Military Mole is rounded (giving same a good wide berth), a vessel may stand straight in and anchor anywhere on a good mud bottom.

After getting pratique, coal steamers enter the new mercantile port to the eastward of the old port, but vessels with grain or general cargo moor stern-on to the bonded warehouses or in the roadsteads.

There is a railway round the harbour in connection with the main line. Electric light on wharves. There are many hydraulic and hand cranes for discharging from 3 to 20 tons each, and one hand crane to lift 40 tons, also four electric movable cranes to lift three tons each. Steamers can discharge 1,200 tons of coal per day.

There are two dry docks; one is 239 ft. long, 62 ft. wide at entrance, and 22 ft. on the sill; the other is 361 ft. long, 64 ft. wide at entrance, and 24 ft. on the sill. There are shipbuilding yards where repairs can be executed.

Time Signals.—Chronometers can be checked here. A ball is hoisted 5 minutes before the signal on a flagstaff on Maschio Angioino, and dropped at noon Mid-European time, equal to 11 h. 0 m. 0 s. Greenwich mean time, and 23 h. 57 m. 1·3 s. local mean time. A gun is also fired.

Pilotage.—Not compulsory. Vessels up to 1,000 tons, 9 c. per ton; from 1,000 to 2,000, 5 c. per ton; over 2,000, 3 c. per ton (minimum 32 lire; maximum 160 lire). Vessels that have taken pilots inwards pay only half the tariff outwards. Pilots are to be met with a short distance outside the end of the mole in the daytime; at night, however, it is not easy to fall in with them.

Port Charges.—Anchorage Dues.—See **Italy**. **Towage** :—£3 per service. **Boat Hire** :—5 lire per day. **Consular Fees** :—British, 26 lire; Turkish, 31 lire. **Ballast** :—2 lire 50 c. per ton. **Brokerage** :—£5 5s.

Pro Forma Charges on a steamer of 2,438 tons net register :—

	Lire	c.
Anchorage dues at lire 1.45 per ton	3,535	10
Pilotage, in and out	244	55
Mooring and unmooring	40	00
Tugs' attendance (three)	150	00
Custom House broker's a/c., guard for lights, consul's dues	126	70
Boatman, 5 days	25	00
Gratuities	40	00
Petty expenses	35	00
Agency fees, £5 5s. 0d.	132	30
	4,328	65 = £170 8s. 5d.

ONEGLIA.

Oneglia, in lat. 43°53' N., long. 8°4' E., is situated on the N. side of a bay in the Gulf of Genoa.

Imports.—Colonial goods, rags, corn, coal, metals, etc.

Exports.—Olive oil, timber, etc.

Accommodation.—Oneglia offers a safe anchorage for vessels up to 1,000 tons. The depth of water near the mole is 23 ft. The harbour has an area of 26 acres. The width of the entrance is 370 ft., with 28 ft. depth in the fairway. There are two loading quays, alongside which vessels drawing 22 ft. can lie.

Italy—Oneglia (*continued*).

Pilotage.—Pilot, if taken, 10 lire.

Port Charges.—**Discharging or taking in Ballast** :—1 lira per ton.
Stevedore :—Stowing oil, 1 lira per ton. **Consular Fees** :—16 lire. **Boat for Mooring Ship** :—40 lire ; **unmooring**, 20 lire. **Customs** :—5 lire.

ORISTANO.

Oristano, in lat. 39°54' N., long. 8°37' E., is situated on the W. coast of Sardinia, 56 miles N.W. of Cagliari. During the summer time this place is very unhealthy.

Exports.—Corn, bark, salt fish, and wine.

Accommodation.—The town is about 2 or 3 miles inland. The usual anchorage in the bay is in 14 ft. of water, about a mile off shore. The bay is well sheltered, except during westerly winds, which blow right in.

Pro Forma Charges on a vessel of 109 reg. tons, ballast in, drawing 9 ft. of water ; cargo of 125 tons of bark out, drawing 11 ft. :—

	Lire	c.
Customs officers	2	50
Anchorage and tonnage dues	62	50
Consul's charges	48	70
Labourage, discharging ballast (80 tons), and stowing cargo, 2 lire 50 c. per man per day	114	00
Broker, entering and clearing	40	00
Stamps, etc.	3	00
Passport	4	00
Manifest inwards	7	50

282 20 = £11 2s. 2d.

ORTONA.

Ortona is in lat 42°22' N., long. 14°23' E.

Population.—16,000.

Imports.—Coal, spirits, phosphates, groceries, grain, timber, sulphate of copper.

Exports.—Dairy produce, vegetables, chloride of lime, sulphuric acid.

Accommodation.—There is a maximum depth of 14 ft. ; at low water 8 in. less, and at high water 6 in. more.

Pilotage.—There are no pilots, but if required fishermen act as such.

Port Charges.—**Mooring** :—1 lira 45 c. per reg. ton. **Boat Hire** :—10 lire. **Ballast** :—1 lira 70 c. per ton. **Labour** :—5 lire per day. **Brokerage** :—£5.

OTRANTO.

Otranto is in lat. 40°9' N. long. 18°28' E.

Imports.—Cereals, animals, timber, building materials, etc.

Export.—Cereals.

Accommodation.—This port is only suitable for small vessels ; anchorage in 4 fathoms. Larger vessels must anchor in 10 fathoms in an exposed position.

PALERMO.

Palermo is in lat 38°5' N., long. 13°22' E.

Population.—With suburbs, 321,360.

Imports.—Cattle, colonial products, cotton, linen, silk and woollen

Italy—Palermo (*continued*).

Ballast :—Alongside, 1st quality, 2 lire 24 c. per ton; 2nd quality, 1 lira 94 c. per ton; in ship's hold, 1st quality, 2 lire 80 c. per ton; 2nd quality, 2 lire 40 c. per ton.

Pro Forma Charges on a steamer of 1,500 tons net reg., carrying 3,000 tons of cargo :—

	Lire	c.
Loading and stowing at 1 lira per ton	3,000	00
Pilotage in, and mooring boat	115	00
Pilotage out, and unmooring boat	130	00
Customs expenses and clearance, manifest, etc.	90	00
Hire of stages for passing cargo into hold	60	00
Trimming cargo	75	00
Sanitary interpreter, boat, and bill of health	20	00
Gratuities to guards	20	00
Harbour dues at 1 lira 45 c. per reg. ton (payable monthly)	2,175	00
Labourers' insurance, about 5 c. per ton	150	00
Boat attendance, at 5 lire per day	20	00
Watchman on board at 5 lire	20	00
Fire guardians at 3 lire per night	12	00
Agency fee, £5 5s.	133	35

6,020 35 = £237 0s. 5d.

Pro Forma Charges on a vessel of 2,343 net reg. tons, carrying 6,064 tons d.w. :—

	Lire	c.
Anchorage dues, port charges, and consular fees	3,513	90
Fireguards	48	00
Pilotage	195	00
Discharging 6,064 tons grain at 1 lira per ton	6,064	00
Insurance on labourers	100	00
Mooring and unmooring	40	00

9,960 90 = £392 3s. 3d.

PESARO.

Pesaro is in lat. 43°53' N., long. 12°53' E.

Population.—25,103.

Exports.—Wines, olives, silk, and glass bottles.

Accommodation.—Vessels of 6 ft. draught can anchor just inside the entrance, between two jetties. Vessels of larger draught can anchor in fine weather in 5 to 6 fathoms, mud bottom, about 2 miles from the shore.

PESCARA.

Pescara is in lat. 42°27' N., long. 14°12' E.

Population.—2,100.

Accommodation.—The channel of the river serves as a harbour, but there is only a depth of 6½ ft. Vessels of large draught anchor 1½ miles from the mouth of the river, in 8 to 11 fathoms, on a mud bottom.

Provisions :—Abundant. **Water** :—Bad. **Anchorage Dues.**—See Italy.

PIOMBINO.

Piombino is in lat. 42°55' N., long. 10°33' E.

Population.—12,000.

Italy—Piombino (*continued*).

Imports.—Coal, pig iron, and fire bricks.

Exports.—Steel, coke, iron, and tin plate.

Accommodation.—The harbour affords accommodation to all vessels up to 6,000 tons reg. A branch railroad runs from Piombino to Campiglia where it connects with the Pisa-Rome main line.

Pilotage.—Optional. If a pilot is taken the charge is 10 c. per reg. ton in, and the same out.

Port Charges.—See **Italy**.

PORT ANZIO.

Port Anzio, in lat. $41^{\circ}28'$ N., long. $12^{\circ}38'$ E., is about half a mile E. of Anzio Point. The harbour is formed by a mole enclosing water with a depth of from 6 to 12 ft., with good sandy bottom. **Population** about 2,000.

PORTO CIVITANOVA.

Porto Civitanova, in lat. $43^{\circ}19'$ N., long. $13^{\circ}39'$ E., is about 10 miles N. of Fermo.

Accommodation.—The anchorage off the village is in 2 to 6 fathoms, about a mile to a mile and a half distant. It is quite open. Provisions and fresh water can be obtained.

PORTO FERRAJO.

Porto Ferrajo, in lat. $42^{\circ}47'$ N., long. $10^{\circ}20'$ E., is on the island of Elba.

Population.—About 5,000.

Imports.—Grain, cheese, cattle, etc.

Exports.—Tunny, salt, iron ore, wines, vinegar, and granite.

Accommodation.—The outer anchorage is in 9 fathoms of water, about a cable length from the entrance to the Darsena or Arsenal. Inside the latter there is 19 ft. of water close alongside the quays, where vessels lie quite safely.

Port Charges.—See **Rio Marina**.

PORTO MAURIZIO.

Porto Maurizio, in lat. $43^{\circ}52'$ N., long. $8^{\circ}2'$ E., is on the Gulf of Genoa.

Population.—7,144.

Imports.—Colonial goods, oil, rags, etc.

Exports.—Olive oil, timber, etc.

Accommodation.—The port has an area of 30 acres, and is formed by two long moles, the one on the east 1,676 ft., and the one on the west 1,686 ft., with an entrance to the east of about 377 ft. The depth of water near the quay is 23 ft., and at the entrance to the harbour 26 ft. The port is only available for vessels of 20 ft. draught. Large vessels can anchor near the quay, which is 170 ft. long.

Pilotage.—From 10 to 20 lire.

Port Charges.—**Stevedore** :—4 to 5 lire per day. Other charges are according to the tonnage of the vessels.

*Italy.***PORTO RECANATI.**

Porto Recanati, in lat. $43^{\circ}25'$ N., long. $13^{\circ}33'$ E., is about 7 miles N.W. of Porto Civitanova.

Accommodation.—Vessels drawing 12 ft. can anchor about half a mile off the village; those of larger draught anchor in 6 fathoms, about a mile and a half off.

Anchorage Dues.—See *Italy*.

PORTO SAN STEFANO.

Porto San Stefano is in lat. $42^{\circ}25'$ N., long. $11^{\circ}6'$ E.

Population.—8,000.

Exports.—Minerals.

Accommodation.—San Stefano is at the south-western point of an open bay, giving access to ships of any size. There are no quays, steamers anchoring in deep water about 100 yards from the shore.

PORTO ST. GIORGIO.

Porto St. Giorgio, in lat. $43^{\circ}12'$ N., long. $13^{\circ}43'$ E., is the port for Fermo, the town being 4 miles inland.

Accommodation.—Vessels anchor off the port in 15 to 24 ft. on a sandy bottom. Cargo can only be loaded or discharged during fine weather, as the roadstead is quite exposed.

Anchorage Dues.—See *Italy*.

PORTO TORRES.

Porto Torres is in lat. $40^{\circ}49'$ N., long. $8^{\circ}25'$ E., and is the harbour for the inland town of Sassari.

Population.—5,100.

Exports.—Butter, tobacco, cheese, fish, oil, wine, cereals, skins, cattle, wool, rags, and anchovies.

Accommodation.—The water area of the old harbour is nearly 10 acres, with a depth of $13\frac{1}{2}$ ft. at the entrance. The harbour is 1,312 ft. long and has a depth of water of from 3 to 14 ft. There is 200 ft. of quayage. The new harbour is still in progress, and will be from 10 to 19 ft. deep, with 36 ft. depth at the entrance. The length of the mole will be 2,821 ft., rendering the harbour safe from every wind.

This port has no lazaretto, and vessels arriving with a foul bill of health are obliged to perform quarantine at the Island of Asinara.

Pilotage.—60 lire, including mooring.

Port Charges.—**Anchorage Dues**:—1 lira 40 c. per reg. ton for each occasion; 4 lire 20 c. per ton for 12 months. **Sanitary Dues**:—10 lire.

Discharging:—Coal, 1 lira 50 c. per ton; all other kinds of merchandise, 2 lire per ton. **Ballast**:—1 lira 80 c. per ton. **Provisions**:—Fresh meat, 1 lira 50 c.; bread, 40 c. per kilo. Vegetables, fuel, etc., moderate in price. Fresh water free. **Labour**:—4 lire per day. **Brokerage**:—50 lire.

*Italy.***POZZALLO.**

Pozzallo is on the E. coast of Sicily.

Population.—7,500.

Imports.—Petroleum, soap, and manufactured goods.

Exports.—Carobs, seeds, cereals, oil, and cheese.

Accommodation.—This is an open roadstead, sheltered on the east, west, and north. There is no harbour.

Ballast.—50 c. per ton.

POZZUOLI.

Pozzuoli, in lat. $40^{\circ}51' N.$, long. $14^{\circ}7' E.$, is in the Bay of Baiæ, about 8 miles W. of Naples.

Population.—19,845.

Accommodation.—There is good and well sheltered anchorage ground here, in from 5 to 8 fathoms of water, about two cable lengths from the shore. There are no hidden dangers, and vessels entering can keep close to the light on the mole, as there is plenty of water. This light is very indifferent, and can only be seen about 3 miles on a clear night. Cargo is brought alongside in boats.

About half a mile W. from here, Sir W. G. Armstrong, Mitchell and Co. have built their works and a pier, with heavy cranes and sheers to lift 160 tons. At the head of the pier there is $29\frac{1}{2}$ ft. of water.

Pilotage.—Not compulsory. There are no local pilots, but they come from Naples when vessels are expected. 9 c. per ton for the first 1,000 tons; 5 c. per ton from 1,001 to 2,000 tons; 3 c. per ton from 2,001 to 3,000; maximum, 160 lire. In addition, 25 per cent. of the total amount has to be added when the pilot comes out from Naples.

Port Charges.—**Anchorage Dues** :—1 lira 45 c. per net reg. ton. **Brokerage** :—£5. **Discharging** coal or grain, 1 lira to 1 lira 50 c. per ton. Fresh water can be obtained from Messrs. Armstrong at the pier at 1 lira per ton.

RAVENNA.

Ravenna, in lat. $44^{\circ}23' N.$, long. $21^{\circ}11' E.$, is about 25 miles N. of Rimini.

Accommodation.—There is no harbour here, but Corsini, about 3 miles N.W., serves as the port of Ravenna, and can only be entered by vessels of 9 ft. draught. There is 15 ft. of water about a mile off the shore, but the anchorage is quite exposed.

Anchorage Dues.—See *Italy*.

REGGIO (Calabria).¹

Reggio, in lat. $38^{\circ}4' N.$, long. $15^{\circ}40' E.$, is on the eastern side of Messina Strait.

Population.—44,415.

Exports.—Raw silk, olive oil, wines, oranges, citrons, cream of tartar, mustard seed, figs, bergamot, and other essential oils.

¹ See Messina.

Italy—Reggio (Calabria) (continued).

Accommodation.—The harbour is not considered quite safe, but possesses a good quay. The water area within the breakwater is 18 acres. The entrance is 131 yards wide and 26 ft. deep. There are 8½ acres with 26 ft. of water, 6½ with 23 ft., and the remainder with 19 ft. The quay is 1,600 ft. long and has no crane on it.

The outer anchorage is close to the town, in from 20 to 35 fathoms. Steamers discharge alongside the quay. Excellent fresh water can be obtained. The climate is healthy.

Pro Forma Charges on a steamer of 1,220 reg. tons, discharging a cargo of coal:—

	Lire	c.
Pilotage	111	00
Health office, interpreter, and guard	8	00
Entering ship in Custom House, manifests, and stamps	23	60
Italian bill of health	7	00
Anchorage duty (1 lira 45 c. per ton)	1,769	60
Fire guard (3 lire per night)	21	00
Telegrams and postage	24	00
British and French consul's fees	26	50
Winchmen	20	00
Unmooring the ship and boat assistance	25	00
Sundries	26	00
Agency, £5 5s.	132	00
Provisions bill and cash	490	20
	2,683	90 = £105 13s. 3d.

RIMINI.

Rimini is in lat. 44°2' N., long. 12°32' E.

Population.—43,203.

Accommodation.—Rimini is only suitable for vessels of 6 ft. draught. A vessel drawing 14 ft. can anchor in the open, about two cable lengths from the pierhead, but must discharge in small boats, causing great detention and risk.

RIO MARINA.

Rio Marina is in lat. 42°48' N., long. 10°24' E.

Population.—4,500.

Export.—Iron ore.

Accommodation.—The roadstead is open to S.E. winds. There are no wharves, but various piers where lighters load and discharge. There is good anchorage for steamers in 18 fathoms of water all the year round.

Port Charges.—**Harbour Dues:**—1 lira 40 c. per reg. ton. **Boat Hire:**—From 4 to 6 lire per day. **Ballast:**—6 lire per ton. **Brokerage:**—100 lire. **Fresh Water:**—5 lire per ton.

Pro Forma Charges on a steamer of 1,000 reg. tons, with general cargo from a foreign port:—

	Lire	c.
Harbour dues at 1 lira 40 c. per reg. ton	1,400	00
Brokerage	100	00
Boat hire	30	00
Custom House	10	00
Clearance	50	00
British Consul	22	00
Bill of health	5	00

1,617 00 = £63 13s. 3d.

Italy.

SALERNO.

Salerno, in lat. $40^{\circ}39' N.$, long. $14^{\circ}46' E.$, is situated in a deep bay of the same name, completely sheltered from the landward side by precipitous hills, and opening S.S.W. to S.S.E. to seaward.

Population.—42,727.

Imports.—Coal, petroleum, wheat, timber, etc.

Exports.—Oil, wine, macaroni, and fruit.

Accommodation.—A small port has been formed by the construction of a mole running N. and S., with a wing mole at right angles, giving accommodation, over one-half of the enclosed surface of 8,000 yards, to vessels of 16 to 22 ft. draught, then shoaling shoreward gradually to 7 ft. over the other half. **Provisions** are cheap and plentiful.

Port Charges.—**Anchorage Dues.**—See **Italy.** **Stevedore** :—Discharging coal, 10*d.* per ton. **Fire Guard** :—3 lire per night.

Pro Forma Charges on a steamer of 864 tons net reg., with 1,411 tons of coal inwards, leaving in ballast :—

	Lire	c.		£	s.	d.
Anchorage dues, 1 lira 45 c. per ton	1,252	80				
Fire guard, 3 lire per night	61	08				
Manifest, in and out	35	00				
Italian bill of health and stamp	6	30				
French bill of health	17	00				
Stamp for bill of lading	0	60				
Pilotage, in and out	150	00				
Mooring and unmooring	60	00				
Discharging cargo, 10 <i>d.</i> per ton	1,411	00				
Coal shoots	30	00				
Tallyman, 1½ <i>d.</i> per ton	211	60				
Boat hire	30	00				
Telegrams, postage, and sundries	31	90				
				3,297	28	129 16 4
Brokerage						5 5 0
						£135 1 4

SAN FELICE.

San Felice, in lat. $41^{\circ}14' N.$, long. $13^{\circ}5' E.$, is a small seaport town, close to Paola Fuora Point, about 60 miles N.W. of Naples.

Accommodation.—There is good anchorage in 8 to 10 fathoms of water on a sandy bottom, but exposed to easterly and southerly winds, which in the winter time blow strong, causing a heavy sea.

Pro Forma Charges on a vessel of 436 reg. tons, drawing 13 ft. 9 in., when loaded :—

	£	s.	d.
Mooring ship	2	6	0
Stevedore, stowing full cargo	7	3	2
Acting consul	0	5	0
Customs charges	0	9	0
„ officer (customary)	0	9	0
	10	12	2

This vessel was free of anchorage dues, etc., as she had discharged her outward cargo at Civitavecchia.

*Italy.***SAN REMO.**

San Remo is in lat. 43°50' N., long. 7°46' E.

Population.—23,000.

Imports.—Wood, charcoal, cement, wine, oil, flour, and coal.

Export.—Olive oil.

Accommodation.—There is a depth of 6.50 metres (21 ft.).

Pilotage.—6 c. per reg. ton for the double journey, in and out.

Port Charges.—**Mooring and Unmooring:**—4 c. per reg. ton.

Anchorage Dues:—1 lira 45 c. per reg. ton. **Labour:**—5 to 8 lire per man per day. **Brokerage:**—£5 5s.

Pro Forma Charges on a steamer of 800 reg. tons, with a cargo of 1,850 tons in, and ballast out, drawing 21 ft. loaded :—

	Lire	c.
Harbour dues at 1 lira 45 c. per reg. ton	1,160	60
Brokerage, £5 5s.	131	25
Pilotage, in and out	48	00
Mooring and unmooring, etc.	38	00
Other charges (about)	40	00

1,417 85 = £55 16s. 5d.

SANTA LIBERATA.

Santa Liberata, in lat. 42°25' N., long. 11°6' E., is situated on the Bay of San Stefano, about 2 miles distant from the small port of Porto San Stefano, on the Monte Argentario promontory.

Export.—Ore.

Accommodation.—Santa Liberata is a roadstead affording good and safe anchorage for ships of any size. The anchorage is sheltered from S. and S.E., but is open to N. and N.W. winds. The port is connected by rail with Orbetello, a station on the Pisa-Rome Railway. Ore is brought alongside in lighters provided with tipping buckets; these buckets have to be raised by the vessels' winches. Provisions can be obtained at reasonable rates.

Pilotage.—Optional. A pilot meets vessels off Porto San Stefano. If his services are engaged, the charge to a steamer would be 70 lire.

Port Charges.—**Anchorage Dues.**—See *Italy*. **Entrance and Clearance Fees:**—12 lire 55 c. **Boat Hire:**—25 lire. **Labour:**—3 to 4 lire per day. **Mooring:**—For mooring and unmooring a steamer, 50 lire.

SANTA VENERE.

Santa Venere is in lat. 38°41' N., long. 16°6' E.

Imports.—Flour, grain, wooden planks, etc.

Exports.—Wine, oil, wood, onions, etc.

Accommodation.—This harbour is only used by small sailing vessels. It is very difficult of access in bad weather.

Pilotage.—Not compulsory. Rates as per arrangement.

Port Charges.—**Clearance Fees:**—25 lire. **Boat Hire:**—5 lire per day. **Labour:**—6 lire per day. **Brokerage:**—5 per cent. of freight.

*Italy.***SAVONA.**

Savona is in lat. $44^{\circ}20'$ N., long. $8^{\circ}27'$ E.

Population.—38,355.

Imports.—Coal, coke, old iron, pig iron, grain, colonial goods, wine, clay, cotton, paraffin oil, saltpetre, tallow, phosphate, copra, etc.

Exports.—Dried chestnuts, staves, wooden hoops, oil, earthenware, and fruits.

Accommodation.—A new port has been constructed called Victor Emmanuel, and, being connected with the old port, affords splendid accommodation for loading and discharging; it is surrounded by ample quays, 5,282 ft. long, provided with rails, so that cargo can be taken from the railway trucks direct into the vessel, and vice versa. The port is provided with six hydraulic and two hand cranes, to lift from $1\frac{1}{2}$ to 8 tons, and two electric cranes to lift $2\frac{1}{2}$ tons. A large dépôt for petroleum has been constructed.

The depth of water at the entrance of the port is from 26 to $29\frac{1}{2}$ ft., and vessels can lie alongside the quay in both ports in 26 ft. of water. The total area is about 70 acres. A mole 656 ft. long has been built, one-half of which is available for vessels to lie alongside. The port is to be further enlarged and improved, the Government having voted £280,000 for that purpose. Adjoining Savona is the splendid Bay of Vado, with a safe anchorage for vessels of all sizes, this bay being particularly sheltered from the S.W. winds.

The shipmaster must report the arrival of his vessel to the sanitary office, producing the bill of health, log book, articles, and ship's register. He must also have an exact manifest of the cargo and ship's stores, taking care to declare all salt, tobacco, cigars, sugar, coffee, and spirits, including that possessed by the crew, as any omission, even if accidental, is punished by a heavy fine.

Facilities for repairs to hull and machinery (afloat) are fairly good.

Pilotage.—Not compulsory, though advisable, as pilots are a great help to speedy mooring. 6 c. per reg. ton and 15 lire inwards; outwards half the above rate. Mooring, for steamers, 35 lire; unmooring, 25 lire. No fixed price for sailing vessels.

Port Charges.—**Stevedore:**—Loading, 55 to 80 c.; discharging, 56 c. to 1 lira 35 c. per ton (including insurance). **Ballast:**—1 lira 80 c. to 2 lire per ton for sailing vessels; 2 lire 20 c. to 2 lire 50 c. for steamers, put into the hold. **Steam-tugs:**—As per agreement.

Pro Forma Charges on a steamer of 1,900 reg. tons, arriving with a cargo of 3,800 tons of Cardiff coal, and leaving in ballast:—

	Lire	c.
Pilotage on arrival (optional)	129	00
Pilotage on departure	64	50
Mooring, unmooring, and anchor boat	66	00
Interpreter at the pratique office	5	00
Discharging cargo, including baskets, 56 c. per ton	2,128	00
Weighing cargo, 10 c. per ton	380	00
Anchorage dues—1 lira 40 c. per ton register	2,660	00
Foreign bill of health	6	80
Clearance at the Consulate (British), 10s.	12	75
Custom House formalities	45	80
Fire guard during 8 nights, at 3 lire per night	24	00
Attending ship's business and collecting freight	127	50

5,649 35 = £222 8s. 4d.

Italy—Savona (*continued*).

Pro Forma Charges on a sailing vessel of 467 reg. tons, with a cargo of coals from Newcastle, and sailing in ballast :—

	Lire	c.
Pilotage on arrival (optional)	43	02
„ on departure	21	51
Mooring and unmooring (as per agreement)	40	00
Anchor boat, in and out	12	00
Discharging cargo (if not done by the crew), 750 tons at 56 c. per ton, including baskets	345	50
Anchorage and sanitary dues, 80 c. per ton register	373	60
Clearing, when at anchorage, in regard to sanitary and Custom House officers	20	00
British consul's fee, 10s.	12	75
Custom House formalities	26	90
Weighing cargo, at 10 c. per ton	75	00
Attending ship's business and collecting freight	75	00
Ballast, 200 tons at 2 lire	400	00
	1,445	28 = £56 18s. 0d.

The greatest part of coal arriving at this port is accepted on the bill of lading weight, less 2 per cent., as stated in the charter party, or weighed on the railway trucks free of expense, and the weight is made very correct.

SCOGLIETTA.

Scoglietta, or Scoglitti, in lat. 36°55' N., long. 14°26' E., is a small village on the S. coast of Sicily, 7 miles from Cape Scalambri.

Accommodation.—There is no harbour, vessels lying at anchor about 2 miles from shore, in 9 fathoms of water. The holding ground is good, but exposed to winds from S. and N.W., which often cause a heavy sea. Vessels are compelled to slip their anchors, and proceed to sea on the first indication of wind from these quarters. Vessels bound to this port should be well found, as no supplies can be bought.

The total charge on a vessel of 240 tons reg. amounted to £10.

Labour.—4s. to 5s. per day.

SESTRI LEVANTE.

Sestri Levante, in lat. 44°18' N., long. 9°25' E., is 21 miles S.E. of Genoa.

Exports.—Copper and manganese ore.

Accommodation.—Its bay is formed by a rocky hill about 200 ft. high, projecting into the sea in a S.W. direction for $\frac{3}{4}$ of a mile from the mainland, which runs in a S.E. direction, and is connected with it by a sandy isthmus, whereon the place is built. Entrance to the bay is from the W. A breakwater of about 150 metres in length partly protects the bay from W. to S.W. winds, which are the only ones the bay is open to. Vessels in entering must not go too near the jetty, as there are rocks for about 12 metres distance. Very good holding, sandy bottom. Vessels can anchor in 6 fathoms in the middle of the bay, at 200 yards from the breakwater point, in a W. $\frac{1}{4}$ S.W. direction with it; but ships wanting to take cargo or discharge should moor with three lengths of chain at both bows and with stream anchor astern, towards the shore, as the N. winds, which sometimes succeed to the W.S.W. ones, will make the ship fall across the swell unless the stern anchor is used. But masters who want to spare time and save themselves trouble can, by paying a small duty, fasten their ships by the

Italy—Sestri Levante (continued).

how to a big buoy floating in the middle of the port, which is attached to a good strong anchor, and load and discharge their cargo by a gangway 8 to 10 metres long from the stern to the jetty. Three miles from here, at Bay Riva Trigoso, there is an iron shipbuilding yard where repairs to steamers can be made. Copper and manganese ore can be loaded at the rate of 250 tons per day in fine weather.

Pilotage.—For a vessel of about 550 tons register, drawing 18 ft. loaded, in and out, and assistance, 75 lire.

Port Charges.—Discharging Ballast:—From ship, 1 lira per ton.

Labour:—4 lire per man per day. **Customs Fees:**—For a vessel of about 550 tons register, 55 lire. Vegetables and beef plentiful and cheap; bread can also be obtained.

SINIGAGLIA.

Sinigaglia is in lat. 43°42' N., long. 13°10' E., 17 miles W.N.W. of Ancona.

Population.—11,000.

Imports.—Cotton and woollen goods, lace, iron, steel, hardware, etc.

Exports.—Silk, oil, fruits, cheese, alum, soda, sulphur, etc.

Accommodation.—Sinigaglia is a port suitable only for small vessels. The harbour is formed by two quays, having a depth at the entrance of 6½ ft., but shoaling to 2 ft. at the head.

Provisions and Water can be obtained.

SORRENTO.

Sorrento, in lat. 40°37' N., long. 14°23' E., is on the S.E. coast of the Gulf of Naples, about 18 miles S.E. of Naples.

Exports.—Oranges and lemons.

Accommodation.—The roadstead has a depth of 20 fathoms close to the shore. It is exposed to winds from the N.E. round to S.S.W. A breakwater is in course of construction. Oil, milk, butter, cheese, meat, and game can be obtained in abundance.

SPEZIA.

Spezia, in lat. 44°7' N., long. 9°47' E., is situated at the head of the gulf of the same name.

Population.—65,612.

Imports.—Coal, wheat, lead ores, timber, metals, machinery, cement, bricks, tiles, phosphates, and basic slag.

Exports.—Oil, manganese ore, pig lead, silver, wine, grain, marble, tannic acid, and sandstone for paving purposes.

Accommodation.—Vessels with cargo for the Italian Government anchor off the town, near the Lagora mole, in 5½ fathoms, with good holding ground. In other cases they anchor on the eastern side of the gulf in the Commercial Harbour where a mole 845 yards long has been built, and the water dredged. There is 15 ft. of water at the entrance of the inner harbour. A breakwater has been built 2½ miles from the town, across the gulf, the top being 5 ft. under water. There are two openings on the

Italy—Spezia (*continued*).

land sides, east and west, the latter 400 and the former 200 yards wide. If required steam-tugs can be procured.

Time Signals.—Chronometers can be checked. A gun is fired at noon Mid-European time, corresponding to 11 h. 0 m. 0 s. Greenwich mean time, and 23 h. 39 m. 18.2 s. local mean time.

Pilotage.—7 c. per reg. ton in, 3½ c. per reg. ton out.

Port Charges.—Anchorage Dues.—See **Italy**. **Bill of Health and Stamps:**—6 lire 90 c. **Sanitary Interpreter:**—5 lire. **Boat Attendance:**—5 lire per day. **Gratuities:**—10 to 20 lire. **Ballast:**—1 lira 50 c. per ton. **Water:**—5 lire per ton. **Stevedore:**—Discharging coal, 6½d. per ton; bricks, tiles, coke, and timber, 9d. per ton; wheat, 5d. to 6d. per ton. Loading marble from 1 to 2 lire per ton. **Brokerage:**—£5 to £6. **Consular Fees:**—Deposit of articles, 2s. 6d.; clearance permits for harbour office, 10s. **Provisions** can be obtained—bread 2½d. per lb.; beef, 7d. per lb. Bunker coal (English) delivered on board, 24s. 6d. per ton.

General Regulations.—Captains should pay special attention to Custom House regulations, and on arrival here send in a declaration of merchandise forming their cargoes, together with a complete list of the ship's stores, especially tobacco, salt, sugar, etc., otherwise they run the risk of being heavily fined. A bill of health is always required, but the health officer has the option of waiving this in the case of vessels from places known to be free from epidemics.

Pro Forma Charges on a steamer of 2,000 tons register, arriving with coal and sailing for the Black Sea :—

	Lire	c.
Telegrams and petties	28	75
Interpreter at the health office	5	00
Custom House and sanitary visits on board	10	00
Custom House formalities	29	85
English consul, fees	17	25
Turkish consul, visa on bill of health	12	00
Russian consul, visa on bill of health	12	50
Italian bill of health	6	90
Anchorage dues, 2,000 tons at 1 lira 45 c.	2,900	00
Pilotage, in and out	210	00
Mooring and unmooring	50	00
Boat hire at 5 lire per day, 8 days	40	00
Winchmen, 32 days, at 5 lire per day	160	00
Fresh water, 10 tons, at 5 lire	50	00
Agency commission, £5, at 25 lire 22 c.	126	10

3,658 35 = £144 0s. 7d.

SYRACUSE.

Syracuse, in lat. 37°3' N., long. 15°18' E., is on the S.E. coast of Sicily.

Population.—32,030.

Exports.—Wine, oil, grain, lemons, oranges, asphalt, honey, cheese, salt, fruit, fish, etc.

Accommodation.—It is one of the finest harbours in the Mediterranean, and can admit vessels of any size. There are 210 acres with under 13 ft. depth, 241 acres with between 13 and 26 ft., and 216 acres with over 26 ft. There is 4,400 ft. of quayage with under 13 ft. of water alongside, and 2,116 ft. with from 13 to 26 ft. alongside. There is one crane. Merchant vessels anchor on the N. side of the bay, with both anchors out, S.W. and

Italy—Syracuse (continued).

S.E., and with a cable on shore. Southerly winds are often strong during the winter months. The town is healthy in winter and summer.

Pilotage.—Inwards, 10 c. per reg. ton ; minimum, 15 lire ; maximum, 60 lire. Outwards, half the above rates.

Port Charges.—**Manifest:**—Inwards and outwards, 5 lire. **Sanitary Interpreter's Fee:**—5 lire. **Sundry Fees for Clearance:**—5 lire. **Clearing Agent:**—20 lire. **Interpreter's Attendance:**—30 lire. **Discharging Ballast:**—1 lira per ton, employing six persons ; if more are required, extra wages are paid at the rate of 3 to 4 lire per man per day. **Loading Ballast:**—2 lire per ton, placed on the ship's deck. **Anchorage Dues.**—See *Italy*.

TAORMINA.

Taormina, in lat. $37^{\circ}52'$ N., long. $15^{\circ}18'$ E., is situated on the E. side of the island of Sicily, close to the town of Giardini, at which place the Custom House business is transacted.

Population.—4,000.

TARANTO.

Taranto, in lat. $40^{\circ}28'$ N., long. $17^{\circ}17'$ E., is situated at the head of the gulf of the same name, about 43 miles W.S.W. of Brindisi.

Population.—About 60,000.

Imports.—Timber, cereals, iron, flour, building materials, etc.

Exports.—Oil, fruits, wheat, oats, beans, dried figs, wine, and spirits.

Accommodation.—The channel leading into the harbour has 14 to 22 fathoms ; the former depth is $2\frac{1}{2}$ miles within the harbour. There is now a channel with a depth of 12 metres (39 ft.), connecting the Great Sea and the Little Sea. Steamers and sailing ships in tow can get up to the arsenal to discharge their cargoes. Vessels drawing 18 ft. can enter the Mare Grande in front of the town, and are sheltered by the islands of San Pietro and San Paolo, and the headland of Cape San Vito. There is 5 fathoms of water close to the town.

The Italian Government are constructing a naval arsenal and dock-yard at Taranto. There is a slip for building, 656 ft. long, equipped with a 100 ton crane. The dry dock is 722 ft. long over all ; 100 ft. wide at the entrance, at high water ordinary spring level, and 33 ft. on the sill at high ordinary spring tides. This dock can be divided into two docks ; one 394 ft. long, and one 328 ft. long. Loading and discharging is done by small boats of 4 to 6 tons capacity. There is a small quay, but the depth alongside is only 4 ft.

Time Signals.—Chronometers can be checked. A ball is hoisted 5 minutes before the signal on a mast, on a building at the Arsenal, and dropped at 23 h. 0 m. 0 s. Greenwich mean time, equal to 0 h. 8 m. 56.7 s. local mean time. A gun is also fired.

TERRANOVA (Sardinia).

Terranova is in lat. $40^{\circ}56'$ N., long. $9^{\circ}30'$ E.

Population.—4,000.

Imports.—Coffee, sugar, flour, etc.

Italy—Terranova (Sardinia) (*continued*).

Exports.—Coal, coke, grain, and vegetables.

Accommodation.—The port is $2\frac{1}{2}$ miles long by 1 mile broad, with from $2\frac{3}{4}$ to 5 fathoms of water. The entrance is 100 yards wide, with 18 ft. of water. Vessels drawing 16 ft. can come here. There is a temporary anchorage for large vessels about $1\frac{1}{2}$ miles from the entrance in 8 to 12 fathoms, on mud.

TERRANOVA (Sicily).

Terranova, in lat. $37^{\circ}3' N.$, long. $14^{\circ}18' E.$, is situated about 17 miles E. of Licata, on the S. shore of the island of Sicily.

Population.—15,000.

Import.—Coal.

Exports.—Bark, corn, soda, beans, cheese, etc.

Accommodation.—It is not a safe port during the winter months, but in summer there is no danger. The anchorage is about $1\frac{1}{2}$ miles from the town, in 7 fathoms, over sand and mud. The most dangerous wind is from S.W., which sends in a heavy sea.

Dues and Charges on a vessel of 204 tons register, discharging 60 tons of ballast and loading 220 tons of bark, amounted to £30, including the stevedore's bill.

TERMINI.

Termini, in lat. $37^{\circ}58' N.$, long. $13^{\circ}40' E.$, is about 21 miles E. of Palermo.

Population.—21,000.

Exports.—Olive oil, wine, dried fruits, sulphur, sumach, macaroni, and tinned vegetables.

Accommodation.—The harbour is protected by a breakwater, inside of which there is 22 fathoms of water. The entrance, 31 ft. deep, is very difficult owing to the formation of sand banks just outside the breakwater. Vessels cannot get alongside the quays, as there is only from 5 to 6 ft. of water. Steamers of 3,000 to 3,500 tons lie about 220 yards from the quays and are loaded by lighters.

TORRE ANNUNZIATA.

Torre Annunziata, in lat. $40^{\circ}47' N.$, long. $14^{\circ}29' E.$, is situated about 12 miles to the S.E. of Naples.

Population.—30,000.

Imports.—Coal, grain, and old iron.

Exports.—Macaroni, potatoes, etc.

Accommodation.—The port is formed by two moles, one 300 yards long and the other about 1,000 yards long. Between these there is a breadth of entrance of about 400 yards, and a depth of 27 ft. The depth inside the harbour is over 24 ft. for about half the area. Rails run round the harbour in connection with the main line. On the quay are three electric movable cranes to lift 3 tons each, available for unloading cargo. Steamers can discharge 1,000 tons of coal per day.

Many steamers discharge grain here from the Black Sea and the United States of America; the port is also visited by a large number of Greek

Italy—Torre Annunziata (continued).

and Italian sailing vessels from the Levant ports. Vessels discharge both grain and coal cargoes into lighters alongside in the harbour.

Ships' provisions can be obtained, and engineering repairs executed.

Pilotage.—Not compulsory.

Port Charges.—Anchorage Dues :—1 lira 40 c. per reg. ton (good for one month). **Ballast** :—1 lira 50 c. per ton. **Brokerage** :—50 lire. For other charges, see **Naples**.

TRAPANI.

Trapani, in lat. 38°0' N., long. 12°34' E., is on the W. coast of Sicily.

Population.—About 63,000.

Imports.—Coal, wheat, mineral oil, timber, cotton and woollen goods, etc.

Exports.—Salt, wine, empty casks, sulphide, oil, olives, preserved tomatoes, etc.

Accommodation.—There is a depth of water alongside the quays of 7.50 metres (24 ft. 7 in.), and in the interior of 2, 3, and 5 metres (6 ft. 6 in., 9 ft. 10 in., 16 ft. 4 in.). The port is said to be safe and healthy at all seasons of the year. Vessels of any draught can complete their cargoes in the roads. Salt is consigned free alongside on the first stage. Cargo is brought alongside in lighters. Vessels of 250 tons can lie alongside the quay, where they are usually moored stern on. Vessels can obtain quick dispatch. A steamer of 3,500 tons d.w. can be loaded in five days, weather permitting, and provided she can work with four steam winches. Discharge of coal, from 300 to 400 tons per day in summer, weather permitting. There is a crane to lift 3 tons.

Pilotage.—Rates according to tariff. From sea to bay, and vice versa, 8 c. per ton (minimum 20 lire; maximum 80 lire). From sea to harbour, 10 c. per ton (minimum, 30 lire; maximum, 120 lire). The same ship, from harbour to sea, half the first payment. From bay to harbour, and vice versa, 8 c. per ton (minimum, 20 lire; maximum, 80 lire). **Moor-ing and Unmooring** :—According to the number of men employed, 5 lire per man.

Port Charges.—Anchorage Dues :—Steamers coming from foreign ports, 1 lira 40 c. per ton (good for one month), or 4 lire 20 c. per ton, for 12 months. Steamers coming from Italian ports, 50 c. per ton, or 12 lire per ton for 12 months. Sailing vessels coming from ports other than Mediterranean, up to 100 tons, 50 c. per ton; over 100 tons, 80 c. per ton, for one year. Vessels coming from Mediterranean ports, from 20 to 50 tons, 20 c. per ton; from 51 to 100, 40 c.; over 100, 60 c. per ton, for one year. **Permits** :—From 10 to 25 lire. **Loading or Discharging Ballast** :—1 lira per ton; 60 c. per ton placed alongside. **Loading Charges** :—Salt, 28 lire per 200 salmas (equal to about 100 tons); sailing vessels, 35 lire; and 3 lire extra in each case for workmen's insurance. **Fresh Water** :—6 lire per ton; water for boilers, 4 lire per ton. **Boat and Boatman** :—5 lire per day. **Winchmen** :—3 lire per day. **Brokerage** :—Vessels taking not more than 1,000 salmas, 100 lire; over 1,000 salmas, 125 lire.

Italy—Trapani (*continued*).**Pro Forma Charges** on a steamer of 1,421 tons :—

	Lire	c.
Manifest	7	00
Pilotage from sea and to sea, 180 lire }	223	00
Mooring and unmooring, 43 lire }		
Permits	19	00
Loading 7,364 salmas of salt at 28 lire per 200 salmas	1,030	96
Consul and Custom House fees	69	90
Anchorage dues at 1 lira 40 c. per reg. ton	1,989	40
Fresh water, 6 tons at 6 lire per ton	36	00
Boatman, 9 days at 5 lire per day	45	00
Extra work	70	00
Porterage and attendance	15	00
Foreman and gratuity to shovellers	15	00
Policeman, night time	10	00
Brokerage	125	00
Insurance on labourers at 3 lire per 200 salmas	110	46

3,765 72 = £148 5s. 1d.
VASTO.

Vasto is in lat. 42°7' N., long. 14°42' E.

Population.—14,000.**Exports.**—Wood, wood-charcoal, and peas.

Accommodation.—Vessels can anchor in 7 to 9 fathoms, on a mud bottom, with good holding ground, about three miles from the town. Coasters anchor near the town, about a mile off, in 12 ft. of water.

Water and provisions are plentiful.

VENICE.(See **Malamocco and Venice**, p. 346.)

MALTA.

Malta, with the islands Gozo, Comino, and a few rocks, has an area of 117 square miles and a population of 217,485. The trade is of an annual value of about £13,000,000 sterling, the imports for the year 1907-8 being £6,983,589, and the exports £5,913,538. The greater proportion of this trade is, however, purely of a transit nature, Valetta, the island port, being one of the most important ports of call in the world. The currency is that of Great Britain, silver being legal tender up to £5, and bronze up to 1s. The weights and measures are as under :—

LENGTH.

3½ palmi	=	1 yard.
1 canna	=	6 feet 10½ inches.
1 measure	=	42 inches.

CUBIC MEASURES.

1 cubic tratto	=	8 cubic feet.
144 „ palmi	=	96 „ „
1 „ canna	=	343 „ „

CAPACITY—DRY GOODS.

100 tummoli, heaped	=	57 imperial bushels.
400 „ struck	=	197 „ „
1 salmi	=	1 imperial quarter.

CAPACITY—LIQUIDS.

1 coffiso	=	4½ imperial gallons.
1 barrel of wine, beer, etc.	=	9½ „ „
100 cafici (oil)	=	450 „ „
130 barrile (wine)	=	1,216 „ „

WEIGHTS.

1½ libbra	=	1 rottolo	=	1.750 lb. avoirdupois.
		64 rottoli	=	112 „
		1 cantar	=	175 „
		1 quintal	=	199 „
		64 cantari	=	5 tons.

There is railway communication and post and telegraph service throughout the island, and cable facilities with all parts of the world. The Anglo-Maltese Bank and the Banco di Malta carry through all banking operations.

Quarantine Regulations.—His Excellency the Governor has been pleased to direct that no vessel, either British or foreign, arriving from a foreign port, excepting small craft trading between Sicily and Malta, will be admitted to pratique in Malta unless provided with a bill of health, bearing the endorsement of the British Consular officer at the port of departure (should such an officer be stationed there), as a guarantee that the bill of health has been issued by the proper sanitary authority of such port, and that the statements contained therein as to the health of the district are worthy of credit. The bill of health should be obtained from the British Consular officer himself, if the regulations of the port of departure admit of his doing so.

Ships on board of which any person has been attacked by cholera during the voyage must not enter a Maltese harbour; but the pilot is to report

Malta.

the case at once to the superintendent of the ports, when the Government will decide upon the measures to be taken in each case.

Business between captains and their agents can be transacted at the landing place, during official hours, in the presence of the officer in charge of the lazaretto.

Captains on their arrival are to give the names of their agent and ship-chandler to the boarding officer, who will cause the agent or ship-chandler to be informed accordingly.

Charges for Vessels in Quarantine.—Vessels, for each day they remain at the Quarantine Station, from 101 to 150 tons, 2s. ; 151 to 200, 2s. 6d. ; 201 to 250, 2s. 9d. ; 251 and upwards, 3s.

Vessels of whatever size sailing in quarantine, having entered upon the performance thereof, to pay at the above rates for the days in port ; but only 2s. a day for the remainder of the term of quarantine.

Vessels liable to quarantine, not having entered upon the performance thereof, to pay 2s. for each day of their continuance in port.

Vessels compelled by stress of weather to enter the Great Harbour to be subject, while they remain there, to the additional charge of 3s. a day for every guard boat which the superintendent of quarantine may deem it necessary to place over them.

Pilots on board vessels subject to quarantine are entitled, if victualled, to 1s. 8d. per diem ; if not victualled, to 2s. 8d. per diem, exclusive of pilotage charges.

Harbour Regulations.—Vessels lying at anchor or moored in the harbour are not to use the steam whistle, fog-horn, or siren for any purpose whatever.

Dispatch.—Steamers and sailing ships intending to touch at Malta for supplies, etc. (or wishing to be reported), should show their signals (Commercial Code) when 10 to 15 miles off, as it will enable the agents to give them better dispatch on entering the port.

VALETTA.

Valetta is in lat. 35°53' N., long. 14°29' E. Distance by sea from Liverpool, 2,240 miles.

Population.—About 25,000.

Imports.—Cotton, coal, woollens, coffee, clothing, sugar, linens, dried fish, iron, beer and ale, indigo, butter, earthenware, grain, cotton seed, petroleum, wine, spirits, etc.

Exports.—Oranges, potatoes, onions, cumin seed, cotton, lace, stone, flour, textiles, etc.

Accommodation.—The harbour of Valetta is large, safe, and commodious, and has sufficient water for the largest vessels afloat. There is here the Clarence hydraulic lift dock capable of lifting ships of 3,000 tons register, and executing any repairs required to hull and machinery.

There are seven dry docks, available for merchant vessels when not required for warships :—

Malta—Valetta (*continued*).

Brokerage.—On coal cargo, 2 per cent. ; on general cargo, 3 per cent.

Expenses generally incurred supplying or receiving coal : For hoisting coal on deck, 8*d.* to 9*d.* per ton ; putting same from deck into bunkers, 5*d.* ; receiving coal in store, 10*d.* ; unstoring and putting on lighters, 6*d.* ; shipping from lighters, 7*d.* For weighing the first 50 tons, 3*d.* per ton ; and the remainder, 1*d.* ; hire of coal trimmers, 5*s.* each ; purchase of baskets, 10*d.* each. Towing lighters from one harbour to the other and back, 10*s.* ; boat and men, 1*s.* 6*d.* ; towing of same from shore to steamer or dock and back, in any of the harbours, 16*s.* 6*d.* These charges are made when there is more than one lighter.

Hire of lighter, 2*s.* 6*d.* to 4*s.* 2*d.* per day. Clearing ashes away, about 7*s.*

Clearance Fees.—£2 2*s.* in, in ballast ; £3 3*s.* if loaded with coal ; £4 4*s.* if with general cargo. **Boat Hire** and petties from 10*s.* 6*d.* to 14*s.* 6*d.*

Labour:—General cargo, 6*d.* per ton ; coal, 10*d.* per ton.

MONTENEGRO.

The principality of Montenegro is situated at the W. of the Balkan Peninsula. It has an area of 3,630 square miles and a population of about 250,000. The coast line measures only about 28 miles.

The total annual trade is valued at £321,000, the imports standing at £240,000 and the exports at £81,000. There are excellent roads, and a railway (narrow gauge) between Antivari and Vir Pazar is in course of construction.

Currency.—There is a nickel and bronze coinage, but Austrian paper and silver are chiefly in circulation.

DULCIGNO.

Dulcigno is in lat. 41°56' N., long. 19°11' E.

Accommodation.—The roadstead is an open anchorage, in 7 to 12 fathoms, about half a mile off the town. Val de Noce, a small port 1½ miles to the N. of Dulcigno, offers fair shelter against all but westerly gales. Dulcigno is a port of Montenegro, and the Austro-Dalmatian laws govern its shipping.

NORWAY.

The kingdom of Norway consists of the western slope of the Scandinavian plateau, having an area of 124,130 square miles, and a population estimated on March 31, 1908, at 2,331,434. The executive power is represented by the King, who exercises his authority through a Council of State, the legislative power being vested in the Storting.

Commerce.—The trade of Norway in 1907 amounted to £35,489,372, the imports, including goods for consumption inland and re-exportation being valued at £21,428,211, and the exports at £14,061,161. The Customs charges are imposed in accordance with a fixed tariff on the net weight of the goods. The recorded values are calculated to information supplied by Det Statistiske Central-bureau. The United Kingdom, in terms of reciprocal treaties, enjoys "most favoured nation rights." Goods in transit to Sweden pass in bond through Norway, and vice versa.

Mercantile Marine.—The Norwegian mercantile marine, at the close of 1908, had a total tonnage of 1,570,201 tons, consisting of 2,089 steamers with a net tonnage of 819,436, and 5,773 sailing vessels with a net tonnage of 750,765.

Internal Communications.—The railways are principally owned and worked by the State, only 251 miles out of a total of 1,605 miles being in the hands of private companies. A number of new State lines are to be constructed. The postal service is good, while the telegraph and telephone system has attained a high development.

Currency, Weights and Measures.—The same monetary system obtains in Norway as in Denmark and Sweden. The Norwegian krone of 100 ore has a value of 1s. 1½d., 18 kroner=£1. The National Bank (Norges Bank) issues notes having a face value of 5, 10, 500, and 1,000 kroner. These are legal tender, the bank being bound to change them for gold on presentation. The metric system of weights and measures has been legally established.

The exact equivalent of the Norwegian weights and measures in English and French will be seen from the following table :—

Norwegian.	English.
1 pund = 498·114 grammes	1·0981 lb. avoirdupois.
1 lod = 15·566 grammes	0·0343 " "
1 lispund = 7·970 kilogrammes	17·5703 " "
1 skipund = 159·396 kilogrammes	351·4053 " "
1 vog = 17·932 kilogrammes	39·5331 " "
90½ lb. Norsk =	100·0000 " "
1 pot = 0·9651 litre	0·2124 gallons.
1 tonde (dry measure) = 1·390 hectolitres	0·4779 quarters.
1 tonde (liquid measure) = 1·158 hectolitres	0·3983 " "
1 alen = 0·6275 metres	0·6862 yards.
1 fod = 0·3137 metres	1·0294 feet.
1 tomme = 26·145 millimetres	1·0294 inches.
1 cubiefod = 0·901 pied cube	1·0907 cubic feet.
1 kommerce last of ships above 200 tons = 2·05 tons register.	
1 " " of ships under 200 tons = 2·30 " "	
1 " " average	= 2·10 " "

Norway.

The English system of tonnage measurement has been legally established.

The following are the measures most used in the timber trade :—

1 Christiania standard, containing 120 deals, of which each is $1\frac{1}{4}$ in. thick, 9 in. wide, and 11 ft. long = $103\frac{1}{2}$ cubic ft.

1 Drammen standard, containing 120 deals, $1\frac{1}{2}$ in. thick, 9 in. wide, and 10 ft. long = $112\frac{1}{2}$ cubic ft.

1 Drammen battens standard, containing 120 battens, $2\frac{1}{2}$ in. thick, $6\frac{1}{2}$ in. wide, and 9 ft. long = $121\frac{1}{2}$ cubic ft.

Besides the above there are two other Drammen standards—the one containing 120 battens, $2\frac{1}{2}$ in. thick, 7 in. wide, and 9 ft. long = $131\frac{1}{4}$ cubic ft. ; the other containing 120 battens, 3 in. thick, 7 in. wide, and 9 ft. long = $157\frac{1}{2}$ cubic ft.

1 Trondhjem standard, containing 120 deals, 3 in. thick, 9 in. wide, and 9 ft. long (French measure) = 180 French cubic ft.

1 Petersburger standard, containing 120 deals, $1\frac{1}{2}$ in. thick, 11 in. wide, and 12 ft. long = 165 cubic ft.

46.5 Christiania standard deals = 1 load of rough timber.

58.2 " " " = 1 load of sawn timber.

Port Charges.—The dues on shipping payable in Norwegian harbours are the same for foreign as for native vessels. They consist of tonnage and lighthouse dues. The regulations in force relative to this subject are to the following effect :—

Tonnage and Lighthouse Dues are levied on ships importing goods into or exporting goods from the kingdom, at the rate of 80 ore per ton inwards, and 50 ore per ton outwards, with the following exceptions :—

(A) No dues are levied on ships proceeding from Norway to fisheries at sea.

(B) The dues are only computed at 40 ore when the vessel arrives at or clears from Hammerfest, Vardo, or Vadsø.

In levying the above dues the following rules are observed :—

(a) The dues are levied on the tonnage stated in the register of measurement, when the officers of the Custom House deem the ship to be fully laden ; if otherwise, the dues are levied on the number of registered tons that have been loaded or unloaded, including any goods which may be placed in deck houses or on sheltered decks, but in no case on more than the number stated in the register of measurement. If the quantity loaded or unloaded at one Custom House does not amount to one ton, neither tonnage nor lighthouse dues are levied. In computing the dues on fishing vessels one-half of the net reg. tonnage is taken irrespective of the quantity of fish carried.

(b) When a vessel, clearing outwards, on the same voyage, loads goods previously imported by her, and laid up in transit, neither inwards nor outwards tonnage and lighthouse dues are levied on these goods. The same rule is observed even when these goods are exported in another ship, should the vessel in which they were imported be so damaged as to be unable to proceed on her voyage. The same rule holds good with respect to vessels putting into a port of refuge, and landing damaged goods for sale, provided this be effected according to the directions of the local authorities. When a vessel inwards unloads goods destined for re-conveyance abroad in another vessel, and such conveyance takes place not later than 20 days from that on which the vessel commenced unloading, then no tonnage or lighthouse dues, either inward or outward, are levied on these goods.

(c) In estimating the tonnage and lighthouse dues, the proportion of the hold of the vessel occupied by the following articles is not considered as forming part of the cargo :—

(1) *On clearing outwards.*—Hay, straw, ice, sawdust, firewood, bricks,

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tiles, and stone, cut or uncut, and whether it contains metallic substances or not.

(2) *On entering inwards*.—Hay, straw, gypsum, manure, and sand, as well as packing cases in which goods have been exported from the kingdom.

(3) Luggage belonging to passengers on board, provisions of the ship, and other articles to be used on board during the voyage, such as coals in steamers and fishing gear. No deductions, however, are allowed for the space occupied by such goods when the vessel is deemed to be fully laden.

(4) Open vessels used by Norwegian fishermen for fishing out of Norway, either on exportation or re-importation.

(5) Goods imported in the same vessel and on the same voyage in which they were exported.

(C) Vessels clearing with cargoes of metals, ore, and phosphate of lime pay 25 ore per ton.

From the above it will be seen that vessels entering or clearing in ballast, or carrying cargoes of ice, are free of tonnage and lighthouse dues.

Pilotage.—With the undermentioned exceptions, every vessel, whether native or foreign, entering or leaving a Norwegian harbour, arriving from or bound for foreign ports, is bound to pay pilotage whether the service of the pilot be required or not. The vessels exempted are :—

- (1) Vessels under 30 tons register.
- (2) Vessels that leave Norway to carry on fishing or other catching at sea, when they are under 130 tons register, even if they call at a foreign port to dispose of their catch.
- (3) Men-of-war and transports in the service of any Government and commanded by officers of that Government.
- (4) Yachts that only as such and without any commercial object call at Norwegian ports, and at the ports the King may determine.
- (5) Vessels engaged in the ordinary carrying trade and which, bound for foreign ports, only call for provisions or coal, to engage or discharge men, or to put sick men on shore.

The charge is calculated on the register tonnage and draught of the vessel, and in accordance with the period of the year and the distance for which the service is rendered. Government pilots are licensed only for certain short stretches of the coast or channel entrances. To avoid having constantly to shift pilots, it is therefore usual for merchant vessels steaming along the coast to employ coast pilots, who are licensed for a certain route or a longer stretch of the coast. When a licensed coast pilot has undertaken to guide a vessel, he is placed on a par with a Government pilot with respect to the provisions of the laws as to penalties and responsibilities.

The following extracts from the pilotage laws are of direct interest to shipmasters :—

The duty of paying the pilotage for inward vessels takes effect when the vessel for the first time crosses the boundaries between the waters outside and inside the rocks and islands, and continues to where the vessel is bound.

A vessel is considered to have reached her destination when she is brought up in the harbour of a town or seaport or other harbour where customs officials are employed, or where she is to load, discharge, unballast, or to be laid up, or where she calls at as a harbour of refuge.

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By anchoring is understood not only usual anchoring but also any other mooring.

No such vessel is, however, bound to pay inland mileage money for more than 15 miles, unless the pilot is employed in piloting her farther.

Whenever the inward pilotage is not due to a Government pilot or any other licensed pilot who may have guided the ship inside the skerries, it shall be paid to the pilots' relief fund.

The duty of paying the pilotage, when outward bound, takes effect when the clearance takes place, or, if the vessel clears more than once, when she clears for the last time. In the case of vessels that do not clear at the Custom House this payment must be made when they leave bound for abroad.

For the out-sailing money the shipmaster may order the vessel to be piloted 1 mile from the anchorage out in the fairway. For every mile farther that the shipmaster employs the pilot, he is bound to pay the usual mileage money inside the skerries and double the mileage money outside.

If the vessel returns without having been abroad, she is not bound to pay inward pilotage nor outward pilotage when she is going to sea again.

If when outward bound a pilot is not employed, the pilotage must be paid to the pilots' relief fund.

A vessel of 130 tons register burden or more is subject to compulsory pilotage outward and inward bound, even if she does not call at foreign ports.

Duties of Pilots.—The pilot must always during the pilotage display the pilot flag, and his cutter must bear the distinctive mark as laid down in the regulations.

They shall be in the possession of and if required produce a copy of this law or an authorized extract of the same.

The pilots are bound to look out for vessels in need of a pilot.

As soon as a pilot observes that a vessel not lying in the harbour signals for a pilot, or that a vessel is in danger, he shall try as soon as possible to get to her. If he cannot board her, he shall from his boat or in some other way guide her.

If several vessels inward bound at the same time make signals for a pilot, the pilot shall first go to the vessel nearest to him, unless he sees any other vessel in imminent danger, in which case he shall take her first.

Pilots are bound to pilot within their pilotage districts every vessel to whatever place, with which they, by their appointment to the pilotage service or by later examination, are declared acquainted with.

A pilot is not bound to pilot a vessel bound for a place outside his pilotage district, unless he voluntarily has undertaken to do so. In this case he is, unless relieved by a pilot with a preferential right, bound, at the demand of the shipmaster, to pilot the vessel until the place is reached or the vessel arrives at a station where exchange may properly be made.

The inward pilot shall attend to the proper anchoring of the vessel, and, as occasion may require, also to her moorings, and must not leave her till the master finds that he can dispense with him, unless another pilot has undertaken to attend to her.

The outward pilot must not leave the vessel till the shipmaster thinks that he can spare his assistance, and if he, while the vessel is still within sight, understands that she, without a pilot, is exposed to danger, he shall immediately come to her assistance.

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If a vessel is compelled to repair back to the harbour before the pilot has left her or while she is still within sight, he is not entitled to any payment for the pilotage back, when the vessel is brought into a harbour within his pilotage district.

Pilots, with the exceptions mentioned hereinafter, are obliged to provide themselves with means of getting on board and landing from the vessels they pilot.

The pilot cannot demand more pilotage than he is entitled to according to the rates, except in the cases where owing to extreme danger his life has been imperilled or he has had to employ other assistance as provided for in other sections of this law. In the case of vessels subject to compulsory pilotage, pilots must not accept less pilotage than fixed in the rates.

The pilot shall, in conformity with the given form, give the shipmaster a receipt for the pilotage received, and in return receive from the latter a certificate for the money paid.

Rights of Pilots.—On all inward ships coming from the sea the pilot's rights of payment are according to the following rules:—

1. The pilot who first reaches an inward bound vessel under compulsory pilotage, or a vessel which signals for a pilot, and offers to pilot her, shall have a preferential right, if the fairway the vessel means to follow lies within his pilotage district, and provided the offer is made within the boundaries fixed by the regulations.

2. If the shipmaster omits to engage the pilot mentioned under the above clause, he shall still pay him the fixed pilotage, even if another pilot later is employed in piloting the vessel.

3. A pilot with no preferential right, who is engaged to pilot an inward vessel under compulsory pilotage, must cede his place to a pilot with a preferential right when the latter offers his service, before the vessel has left the boundaries between the outer and inner waters.

4. If the shipmaster has entrusted one who is not a pilot with the guidance of the ship, he must carry signals for a pilot as long as this guidance lasts. If a pilot offers his services before the vessel has reached a place where the compulsory pilotage ceases, he has a right to relieve the coast pilot, or if the shipmaster prefers to keep the latter, to receive the pilotage according to the scale fixed in the following clause.

5. When a pilot in inner waters undertakes to pilot a vessel which has been offered no pilotage, he is, in addition to the mileage money, entitled to a share of the in-sailing money in proportion to the distance he has piloted. If a vessel for want of a pilot has been under the necessity of engaging a coast pilot, the latter shall receive mileage money for the distance for which he has piloted in inner waters. That part of the pilotage money which is not earned either by a Government pilot or coast pilot shall fall to the pilots' relief fund. The apportionment shall be managed by the alderman or master-pilot concerned.

6. If a pilot with a preferential right comes to a vessel after it has been brought up, he is entitled to no pilotage, but he shall, if required, assist in the mooring of the ship, receiving such money as the master may think right, but not less than 5 kr.

7. When a pilot is called in the inner waters and undertakes to pilot a vessel not under compulsory pilotage, he is entitled to mileage money for the distance piloted, but not less than 12 kr.

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8. When a pilot pilots a vessel in from sea and again out to sea, the vessel having called at no destination, he shall receive both in-sailing money and mileage money for the distance he has piloted the vessel.

9. If the in-sailing is stopped by an incident beyond the control of the pilot before the vessel has reached the inner waters, he is still entitled to the in-sailing money.

10. When a pilot exposes his life or is compelled to employ more men than usual to get to the vessel, or when the vessel is in a sinking condition, or owing to damage is in danger of shipwreck, the pilot is allowed, when his pilotage is finished, to bargain with the master for a higher payment than he is entitled to according to the ordinary pilot dues.

The outward pilotage of a vessel under compulsory pilotage, or any other vessel at anchor that requires a pilot, shall be carried out by a pilot belonging to the station where the vessel is lying.

For such service the pilot is entitled to—

- (1) Payment for the pilotage as provided for in the official rates for the time being;
- (2) A remuneration of 5 kr. and diet money for the time for which the pilot has been at the disposal of the vessel, if he, being called to the vessel to pilot her, is not employed by the master.

If the pilot remains on board the vessel for more than 24 hours, he shall, in addition to the payment according to the rates, receive 5 kr. for every succeeding day.

The pilot is, so far as his day's pay is concerned, considered to be on board the vessel when outward bound from the time—when ordered to come—he really arrives, and inward bound from the time he has come on board and is engaged in the pilotage.

When the vessel during the pilotage, from other reasons than the weather, at the master's command, is put to anchor, the pilot is, in addition to his day's pay, entitled to 3 kr. for every full 6 hours the stay at anchorage lasts.

If the master desires the pilot to stay on board when the pilotage is ended, the pilot is entitled to a day's pay of 5 kr., which commences from the moment the pilotage is brought to an end.

If a shipmaster employs a pilot as a guide in the main sea, the pilot shall, in addition to 12 kr. for the call, receive mileage money for the distance for which he has piloted and daily pay.

If the pilot called is employed with the inward pilotage of the vessel, he shall only be paid according to the rules for inward pilotage, with mileage money for the distance for which he has piloted in the outer waters. The pilot is in this case considered to have entered upon the pilotage there, where he came to the vessel.

For pilotage from one harbour to another within the kingdom, the pilot is entitled to usual mileage money (according to the tables for outward pilotage), but at least 12 kr. for each pilotage.

If a pilot by signal is called to a vessel for any other purpose than pilotage, e.g., to carry a telegram or message, or to put somebody ashore, he is entitled to 12 kr. if the vessel is in the outer waters, and 6 kr. if in the inner waters, in both cases with an addition of 2 kr. for every half-hour for which the master detains him more than one hour.

The pilot shall have free board and suitable accommodation.

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If the pilot considers it necessary to bring an assistant, the latter shall also have free board and suitable accommodation.

The pilot may require that his cutter be towed by the vessel, if this can be done without any inconvenience to the ship, and to get the ropes necessary for the purpose. He is entitled to a compensation from the shipmaster for damage caused either to his boat, or in other ways by any neglect or carelessness for which the master might be responsible.

If a pilot, on account of storm or other reasons for which he cannot account, or by neglect from the shipmaster, is compelled to stay on board the vessel outside his pilotage district, the master shall, for the time for which the pilot stays on board after the pilotage has ceased, as well as for the time which is reasonably supposed necessary for the pilot to reach his home again, pay him in addition to the fixed pilotage 4 kr. per day, and give him free board with suitable remuneration for the expenses of his home journey, whereas he is not entitled to diet money for the time mentioned.

If the pilot has brought an assistant, the latter shall receive 2 kr. per diem and free board, with a suitable remuneration for the expenses of the home journey.

Shipmasters' Duties : their Liabilities for the Pilotage.—The shipmaster is bound to employ the first pilot who offers his service and proves to have a preferential right to pilot a vessel coming from sea under compulsory pilotage, if the offer is made within the boundaries fixed by the regulations.

A shipmaster who has made signals for a pilot shall take these down as soon as a pilot has been engaged ; if not, he shall pay the pilot who, on account of the signals, has come to the vessel.

As soon as a pilot has been engaged, the shipmaster shall, for the information of other pilots, hoist such a signal as may be for the time being ordered by the regulations.

If the master of a vessel under compulsory pilotage rejects the pilot first arrived with a preferential right to pilotage, and later during her sailing for her destination engages another pilot for the pilotage of the vessel, he is bound to pay both the pilots.

If the master of a vessel under compulsory pilotage is offered no pilot, he shall still pay the fixed pilotage to the pilots' relief fund, deducting what in each case might be due to a coast pilot.

When a pilot is wanted by a vessel not lying in the harbour, the pilot shall be called by such day or night signals as provided for by the regulations at the time in force.

If the vessel is lying in the harbour, the pilot shall be engaged at the pilot's, alderman's, or at the master-pilot's, or from such other official as may be authorized to provide pilots. If the pilot with a preferential right can be secured by signals, any other summons is unnecessary.

No vessel arrived under compulsory pilotage shall be cleared at the Custom House except under the following conditions :

1. That he has paid the fixed pilotage for the inward pilotage. Neither shall any vessel outward bound under compulsory pilotage be cleared out at the Custom House till the master has proved that he has paid the outward pilotage.

2. If pilotage is claimed in conformity with the provisions of this law, and the shipmaster declares that he will lodge a complaint or go to law, still the vessel must not be cleared at the Custom House unless the master pro-

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vides the pilot-alderman with an acceptable security for the pilotage and for the expenses of the case.

3. The pilots' alderman, or such other official as is thereto authorized, may refuse to provide a vessel with a pilot till the due pilotage is paid or the security mentioned in the previous clause is found.

4. If any shipmaster sails without having paid the due pilotage or found security, clearance shall, at the demand of the superintendent of pilots, be denied at any place where he may afterwards touch at, until he has paid or deposited the pilotage and found an acceptable security for eventual fines and expenses of the case.

Inward pilotage is considered to begin at the moment when the pilot, at the shipmaster's demand, undertakes the pilotage of the vessel, and in every case from the point where the boundaries between the outer and inner waters are crossed. Outward pilotage is considered to begin at the moment the anchor is weighed or the moorings are cast loose.

The distances are determined by distance tables published by the King's authority. If the distance piloted is not mentioned in these tables, it is to be measured on a chart of the channel, irrespective of the tacking or other incidental lengthening of the sailing. The distance is to be stated in whole miles of 15 to the degree of latitude. A distance less than a mile but more than a quarter of a mile is rated as a mile. A distance less than a quarter of a mile is not rated.

The regulations may determine that at various places, where such is considered expedient, an exchange of pilots shall take place in vessels under compulsory pilotage, or in the case of vessels which desire to continue their voyage farther up the fairway than comes within the range of duty of one pilot. The rates for such exchange or further pilotage will be fixed from time to time as may be considered desirable.

The regulations may also, not considering the exchange of pilots, give the necessary provisions and rates for certain harbours, the conditions of which may require more precise rules, and in particular for that pilotage which is demanded to be carried out by Government pilots from one place to another within the same harbour district.

Penalties incurred by Pilots.—If any vessel that is being piloted receives damage arising either from the ignorance or carelessness of the pilot, the vessel shall be exempted from paying the pilotage, and the pilot punished by fine; imprisonment, or by the loss of his office, or according to the circumstances by the loss of his office and imprisonment.

If a pilot claims more, or if he accepts less, than he is entitled to he is to be punished by fine.

Penalties incurred by Shipmasters.—If any shipmaster by an incorrect statement seeks to avoid payment of the authorized pilotage, he shall, in addition to the payment of the fixed amount, be fined in double the money.

If the master of a vessel under compulsory pilotage with no pilot on board, or of a vessel not under compulsory pilotage but making signals for a pilot, steers away from any pilot in the fairway and thereby prevents the latter from reaching the vessel and offering his assistance, he is to be fined 50 kr. Should the shipmaster, having taken a pilot on board, fail to make the signal as provided, he may be punished by fine up to 50 kr.

If a shipmaster by fraudulently stating the draught and tonnage of his vessel to be less than they really are causes a less pilotage to be charged than

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is due according to the draught and tonnage of his vessel, he is to be fined 25 kr. for each rising rate of the table, higher than the one according to which the pilotage has been calculated up to and including the rate which should properly have been paid.

If any shipmaster sails without having paid the fixed pilotage, he shall, in addition to this, be fined in the double amount.

The vessel is liable to all the taxes imposed upon the shipmaster in this law.

Beacons and Buoyage.—The following system of beacons and buoyage has been adopted by order of the Government in marking the channels and shoals on or near the coast of Norway.

(A) Fixed beacons near the fairway, with an arm indicating on which side the fairway lies. When vessels may pass on either side, the beacons will have two arms, one on each side.

Beacons marking shoals in open Norwegian waters will be without arms.

(B) Floating beacons and buoys from the Swedish boundary to Lister (about 17 miles north-westward of the Naze) surmounted by top-marks in accordance with the following system :—

1. A white perch with broom turned upwards signifies that the shoal is situated northward or eastward of the mark.

2. A black perch with broom turned downwards signifies that the shoal is situated southward or westward of the mark.

NOTE.—In fairways, the direction of which is northerly and southerly, vessels should pass westward of the white perches, and eastward of the black perches; and in fairways trending easterly and westerly, vessels should keep to southward of the white perches, and northward of the black perches.

3. Perches painted white and black in horizontal stripes, and with ball, signify that in the direction of the fairway they may be passed on either side.

Buoys commonly carry staff with balloons of colour similar to the perches above described. From Lister to the Russian boundary the floating sea marks are either staffs or buoys, situated on that side of the shoals which faces the main fairway. The staffs are painted black. The buoys commonly carry balloon or perch.

In some fairways, where there are many sea marks, a new system of marking, which probably soon will be adopted all along the coast, is used, viz. :—

(a) Where the direction of the fairway is nearest to N.S. or S.N.; on the east side black with a pointed top, on the west side red with a thick top.

(b) Where the direction is nearest to E.W. or W.E.; on the south side black with a pointed top; on the north side red with a thick top.

A green staff is the mark for wrecks.

NOTE.—During the winter season the floating buoys and beacons in the inner channels are removed, and those in the fairways between the Swedish boundary and Lister, in which there is danger of ice, have their topmarks (brooms and balls) removed in the autumn and replaced in the following spring, after the disappearance of ice.

Coasting Trade.—Foreign vessels are now placed on the same footing as Norwegian for the carrying of goods from one part of the country to another.

Norway.

Customs Regulations.—Vessels bound for Norway ought to be provided with a document running as follows, ready to be handed to the customs officer :—

I, Captain , from the Port of , and bound for , with the belonging to of , and carrying tons, according to the vessel's certificate, dated , (if not provided with Norwegian certificate, simply say so) hereby declare to have the following goods on board, and no more. (Here follows a specification, as for example)—1 case, marked A.F. \times 105 ; 1 bale marked B.H. \times 109 ; 120 tons coal ; 20 tons grindstones, etc. ; and for the use of the ship (Here give the quantities of all provisions and stores on board.) (Here give captain's signature.)

By omitting to have the above document, shipmasters are liable to a fine not exceeding £22.

Emigration.—No shipowners, or charterers, or agents employed by them are allowed to undertake the transport of emigrants from Norwegian ports without they be first provided with written permission from the police authorities. Ships going, however, direct to foreign ports are permitted to carry not more than 12 emigrants without any such permission. Each emigrant is to receive from the agent a written contract detailing the conditions arranged, how and whither he and his effects are to be forwarded, how far special liability is undertaken for the emigrant's maintenance in the event of shipwreck, and what amount is paid or to be paid by the emigrant. Any condition involving working off amount after arrival abroad is void and renders the agent liable to a penalty. These regulations may not be evaded by emigrants being conveyed as ordinary passengers. Passage contracts must be signed by the agent, and not merely stamped.

The agent must, before forwarding an emigrant, ascertain that there is no military duty to be performed, police order for arrest, or other hindrance to emigration. Agents must inform the police authorities in advance of each day of departure, with particulars of the emigrants and their tickets, etc.

AALESUND.

Aalesund is in lat. 62°29' N., long. 6°9' E.

Population.—12,000.

Imports.—Coal, salt.

Exports.—Dried codfish and herrings, cod-liver and seal-oil, fresh halibut, herring, and salmon in ice.

Accommodation.—Inside the harbour there is a depth of 23 ft. at low water ; the tide rises 5 ft. The north quay is 580 ft. long with 24 ft. alongside ; the west quay is 151 ft. long with 18 ft. alongside ; the south quay is 450 ft. long, with 16 ft. alongside. The above depths are for low water. There are three patent slips with an available docking length, on the blocks, of 150, 198, and 80 ft., and a lifting power of 350, 700, and 150 tons respectively.

Pilotage.—Compulsory, in and out.

Port Charges.—**Light Dues and Harbour Dues** :—88 ore per reg. ton. **Labour** :—About 5s. per day.

Pro Forma Charges on a steamer of 600 reg. tons, with a cargo of coal in, and water ballast out, drawing 16 ft. loaded :—

Norway—Aalesund (*continued*).

	Kr.	ore.
Light and harbour dues at 88 ore per reg. ton	528	00
Brokerage	50	00
Pilotage (summer, 68 kr. 50 ore in; 28 kr. 50 ore out), winter, 87 kr. 20 ore in; 36 kr. out	123	20
Harbour pilot	20	00
Mooring and harbour-master's fees	12	00
Labour, discharging 1,200 tons of coal at 45 ore per ton	540	00
	1,273	20 = £70 14s. 8d.

AASGAARDSTRAND.

Aasgaardstrand, in lat. 59°21' N., long. 10°28' E., is 6 miles N.E. of Tonsberg.

Accommodation.—It is an open roadstead, anchorage in 8 fathoms. There is a heavy swell with S.E. and N.E. winds.

ARENDAL.

Arendal is in lat. 58°27' N., long. 8°43' E.

Population.—12,000.

Import.—Coal.

Exports.—Timber, wood-pulp, and feldspar.

Accommodation.—The harbour has from 8 to 20 fathoms of water, and is safe and well sheltered. Vessels windbound generally anchor in one of the outer harbours—inside Mardö Island in 8 to 10 fathoms, Sandvig in 12 to 16 fathoms, and Ravesand Bay in 7 fathoms. These three places afford good anchorage, and are well sheltered. Vessels of the largest size can safely enter at any time, and go close up to the town, where there is over 3,000 ft. of quayage. Tugboats, for towing to and from the sea and the neighbouring ports, can be obtained at moderate charges. Shipbuilding is carried on, and vessels can be repaired here. Fresh water and all kinds of provisions can be had. Coal depôts for steamers.

Pilotage.—Pilots board vessels outside the Torungen Islands.

Port Charges.—Custom House Dues, Tonnage Dues, and Light Dues:—80 ore per reg. ton for vessels coming with cargo and discharging here; 50 ore per reg. ton for vessels going out with cargo, loading here.

Harbour Dues:—No charge is made for wind-bound vessels.

For vessels of	50 tons up to	100 tons						Kr.	ore.
"	101	" 150	"	"	"	"	"	0	80
"	151	" 200	"	"	"	"	"	1	20
"	201	" 250	"	"	"	"	"	1	60
"	251	" 300	"	"	"	"	"	1	80
"	301	" 350	"	"	"	"	"	2	00
"	351	" 400	"	"	"	"	"	2	40
"	401	" 450	"	"	"	"	"	2	80
"	451	" 500	"	"	"	"	"	3	00
"	501	" 600	"	"	"	"	"	3	20
"	601	" 700	"	"	"	"	"	3	60
"	701	" 800	"	"	"	"	"	4	00
"	801	" 900	"	"	"	"	"	4	20
"	901	" 1,000	"	"	"	"	"	4	40
"	1,001	" 1,100	"	"	"	"	"	4	80
"	1,101	" 1,200	"	"	"	"	"	5	20
"	1,201	" 1,300	"	"	"	"	"	5	40
"	1,301 and above		"	"	"	"	"	5	60
"			"	"	"	"	"	6	00

Wharfage:—2 ore per reg. ton. **Stevedore:**—From 2 kr. 10 ore to 2 kr.

Norway—Arendal (*continued*).

85 ore per standard for deals, battens, timber, etc.; 50 ore per ton for wood-pulp and coal; 60 ore per ton for feldspar.

Pro Forma Charges on a steamer of 864 reg. tons, with a cargo of 1,800 tons in, and ballast out, drawing 16 ft. loaded :—

	Kr.	ore.
Customs dues at 80 ore per reg. ton, 691 kr. 20 ore; harbour dues		
4 kr. 40 ore.	695	60
Brokerage, 3 per cent. on £326 19s. 6d., £9 16s. 2d.	176	55
Pilotage in (out free)	77	30
Boat hire	12	00
Discharging, 1,804 tons at 50 ore	902	00
Ballasting, 864 reg. tons at 16 ore	138	24
Clearance	75	00
	2,076	69 = £115 7s. 5d.

BERGEN.

Bergen is in lat. 60°23' N., long. 5°18' E.

Population.—75,000.

Imports.—Grain, salt, iron, coal, hardware, coffee, sugar, wine, etc.

Exports.—Dried cod-fish, herrings, cod-oil, fresh fish, skins, bones, butter, etc.

Accommodation.—The harbour is very good and has sufficient water for the largest vessels. On the west side of the inner harbour there is 2,240 ft. of quayage, varying in depth from 8 to 37 ft. alongside. On the east side there is 2,296 ft. of quayage, with a depth of from 11 to 26 ft. alongside. There are also eight smaller quays with a depth of from 4½ to 10½ ft. All the depths given are at low water; tide rises from 3½ to 5½ ft. There are cranes to lift from 1 to 5 tons, and one crane to lift 10 tons. Men-of-war and pleasure yachts always anchor in the side harbour at Nostet. There are three dry docks and mechanical works for iron shipbuilding. The dimensions of the largest dock are as follows: 365 ft. long, 55 ft. broad, depth on sill at high water ordinary springs 22 ft. The second is 269½ ft. long, 38 ft. wide at the entrance, and 11 ft. on the sill. The third is 249 ft. long, 41 ft. wide at the entrance, and 12½ ft. on the sill. The length given is over all, the width is at high water ordinary spring level, and the depth on the sill is at high water ordinary springs.

There are three patent slips with a lifting capacity of 350, 1,000, and 2,000 tons respectively.

Before getting under the coast, masters must make out a manifest and list of stores. Failing this, they will be subject to a fine.

Time Signals.—Chronometers can be checked. The ball is hoisted 15 minutes before the signal on the N.E. corner of the observatory. The ball is dropped at noon Mid-European time, equal to 23 h. 0 m. 0 s. Greenwich mean time, and 23 h. 21 m. 14·3 s. local mean time.

Pilotage.—As the entrance is difficult, and pilotage has to be paid whether pilots are used or not, it should never be attempted without a pilot. Vessels calling for coal or stores only are free of compulsory pilotage. The pilotage dues consist of entrance dues and distance money, both according to vessel's size and draught. Pilotage from and to Korsfjorden, 6 miles in and 5 miles out, for vessels of :—

Norway—Bergen (continued).

	500 reg. ton. 12 ft. Kr. ore.	1,000 reg. ton. 16 ft. Kr. ore.	1,500 reg. ton. 21 ft. Kr. ore.	2,500 reg. ton. 32 ft. Kr. ore.
<i>Winter tax—</i>				
In loaded	76 00	119 40	165 90	241 20
Out in ballast	44 18	69 54	96 64	128 74
<i>Summer tax—</i>				
In loaded	59 80	93 40	129 40	178 90
Out in ballast	34 80	54 40	75 40	95 00
Harbour pilot	6 00	10 00	15 00	25 00

If the vessel has signalled for a pilot, pilotage is due from where the pilot comes on board ; if no signal has been given, the pilotage is compulsory inside a radius of 20 nautical miles from any of the entrances. At sea the pilots use small deck-boats, with a brown vertical stripe in the sail ; under the coast, in fine weather, rowing boats. The pilot's flag is white with a red stripe. The entrances where pilots can be obtained for Bergen are :—

Skudesnæs	22 Norwegian miles south of Bergen.
Bommelfjord	16½ " " " "
Sælbøfjord	9½ " " " "
Stolmen	8 " " " "
Korsfjord	5½ " " " "
Feje	7½ " " north "

Steamers enter through the Korsfjord (Marsten light) ; this is the shortest and cheapest.

Port Charges.—Tonnage and Light Dues :—80 ore per ton. **Harbour and Buoy Dues :—**8 kr. ; moored to buoys, 16 kr. **Mooring Boat :—**2 men, 10 kr. **Boatman :—**4 kr. per day. **Protest :—**5 kr. 60 ore. **Survey of Hatches :—**16 kr. **Clerk Clearing :—**4 kr. **Shipbroker :—**£5 5s. for vessel of 2,000 tons. **Life-boat and Training Ship Fund :—**1 ore per ton. **Discharging :—**Grain, 6d. per ton up to 1,000 tons, and 7½d. per ton above. Coal, 60 ore per ton. The workmen provide their own shovels and drive the winches, and the vessels supply steam gins and runners, spouts, tubs, stages, etc. Grain cargoes are weighed by the sworn weigher.

BODO.

Bodo, in lat. 67°17' N., long. 14°25' E., is situated near the S.W. extremity of the peninsula, on the N. side of Salten Fiord.

Population.—About 3,700.

Accommodation.—In the western part of the bay there is 6 to 9 fathoms over clay, but the inner part is a shoal. Nyholm Sound has the same depth and bottom, and is more sheltered, but it is necessary to moor with hawsers made fast to the rings, as the sound is narrow, and the tidal streams are strong. On the N. side of the harbour there is a place where vessels of a moderate size are beached for repairs. It is proposed to build a breakwater.

Pilotage.—Government pilots are stationed here. Pilotage on a vessel of 900 tons, 18 ft. draught, loaded, 84 kr. inwards ; 33 kr. outwards.

Port Charges.—Harbour and Light Dues :—80 ore per reg. ton. Provisions and coal may be obtained, and there is a spring of good water at the inner end of the bay.

*Norway.***BREVIG.**

Brevig is in lat. 59°3' N., long. 9°39' E.

Population.—About 2,000.

Import.—Coal.

Exports.—Timber and ice.

Accommodation.—This port is available for the largest vessels. The harbour is well sheltered, with a depth of from 3 to 15 fathoms. There are two quays here: Lansbryggen Quay, length of quayage 412 ft., depth of water 8 to 13 ft.; and New Quay, length 80 ft., depth of water 20 ft. There are two shipyards where wooden vessels can be repaired.

Amongst the various good loading places for ice and timber are those in the Langangen and Eidanger Fiords to the E., and Stathelle on the W., opposite Brevig, where there is good anchorage in 5 to 14 fathoms. Proceeding up the fiord to the N.W. is Trosvig Harbour, where there is 3 to 15 fathoms of water; timber is loaded here. On the W. side of Frier Fiord are Omborgsnoes, Skjaerke, and Sortebogen, ice-loading places, all with safe anchorage. Railway communication with Porsgrund, Skien, Christiania, Drammen, etc. Steamer communication with Christiania, Christiansand, Bergen, etc. Telegraph and telephone stations.

Pilotage.—Compulsory. Rates according to tariff.

Port Charges.—Same as at other Norwegian ports on the S. coast.

CHRISTIANIA.

Christiania, in lat. 59°55' N., long. 10°43' E., is situated at the northern end of the fiord of the same name.

Population.—227,626.

Imports.—Coal, cereals, cotton and woollen goods, agricultural machinery, etc.

Exports.—Wood goods, moist and dry wood-pulp, ice, herrings, beer, manufactured goods, skins, matches, horseshoe nails, etc.

Accommodation.—The harbour is excellent and well sheltered, with sufficient water for any draught; vessels drawing 18 to 25 ft. lie alongside the quays, which are 32,600 ft. long. There is sometimes ice during the winter time, but the navigation is kept open by two powerful ice-breakers. There are five cranes to lift from 3 to 50 tons, and a floating steam crane to lift 40 tons. There are two private grain elevators with a capacity of 500 to 600 tons per day. It has been decided (1909) to construct a floating dock with accommodation for vessels up to 4,000 tons dead weight.

Dry Docks.—There are two shipbuilding yards, one with two floating docks, able together to take steamers up to 350 ft. long, 46 ft. beam, and 15 ft. draught, lifting power being 2,500 tons; and one with a graving dock 255 ft. long and 14 ft. deep on the sill. Both have cranes to lift 50 tons.

Provisions are plentiful and can be had at moderate prices.

Time Signals.—Chronometers can be checked. A black and white drum is hoisted on the roof of the observatory 5 minutes before the signal. The drum is dropped at noon Mid-European time, equal to 23 h. 0 m. 0 s. Greenwich mean time, and 23 h. 42 m. 54.2 s. local mean time.

Norway—Christiania (continued).

Pilotage.—Compulsory for all ships in ballast or with cargo, coming from or leaving for foreign ports. The first pilot who hails the ship within 5 miles off Føerder Lighthouse (entrance of Christianiafjord) is entitled to the pilotage, and by taking another pilot the ship will have to pay both of them. The captain should refuse to pay distance money from the sea to Føerder Lighthouse immediately on the pilot coming on board.

The privileged pilot-boats for Christianiafjord and Christiania carry one of the following names on the sail : Fr-hald, Fr-stad, Moss, Horten, Tn-berg, Sn-sund, Larvik, Lng-sund, and have the preference, even if another pilot is already on board.

The pilotage from Føerder to Christiania for vessels from 300 reg. tons, drawing 15 ft., up to 1,200 reg. tons, drawing 20 ft., is from 90 to 170 kr. summer tax, and about 110 to 230 kr. winter tax.

Port Charges.—Tonnage and Light Dues :—80 ore per reg. ton, and 10 ore per reg. ton harbour dues inwards, and 50 ore per reg. ton outwards, payable on the quantity of cargo discharged or loaded. In ballast no dues are paid. Ships loading ice, stone, or ore are also exempted from paying the tonnage and light dues.

Quay Dues.—For a vessel of from 300 to 1,400 reg. tons, the Quay dues vary from 12 kr. to 20 kr. a day, reckoned from 12 noon to 12 o'clock midnight. Vessels discharging coal pay one-third less. **Ballast :**—About 1 kr. 50 ore per ton, sand or stone, delivered alongside. Bunker coal costs about 7s. 6d. per ton above Newcastle prices.

Vessels arriving or leaving the port between December 1 and April 1 have to pay 5 ore per net reg. ton inwards and 5 ore outwards. **Discharging :**—Coal, 50 ore per ton for steamers, 45 ore per ton for sailing vessels ; grain, 50 ore ; rather more for part cargo. **Loading :**—2 kr. 25 ore to 2 kr. 50 ore per standard wood goods ; about 70 ore per net reg. ton ice ; 70 ore per ton dry, and 60 ore per ton wet wood-pulp. (Wood pulp in bales measures about 40 to 45 cubic ft. per ton moist, and 85 to 100 cubic ft. per ton dry.) **Brokerage** is now regulated by tariff ; for a 1,500 ton cargo steamer, 100 kr. ; smaller steamers proportionately less.

Pro Forma Charges on a steamer of 2,262 net reg. tons (6,160 tons d.w.) arriving from the Black Sea with a cargo of grain, and leaving for abroad in ballast :—

	Kr.	ore.
Pilotage from sea to Christiania	240	00
Harbour pilotage, boatmen, etc.	25	00
Custom House fees	2,405	00
Surveying cargo	9	50
Water	50	00
Discharging 6,160 tons at 50 ore	3,080	00
Customs overtime	100	00
Quay dues	200	00
Pilotage outwards	50	00
Clearing	100	00
Telegrams, postage, etc.	25	00

6,284 50 = £349 2s. 9d.

There are numerous places in the fiord, between Christiania and Dröbak, where ships load ice and wood.

Belonging to Christiania Custom House district, where ships must clear, there are—On the east side, Haslum, Blylaget, Prestéskjar, Flaskbøk,

Norway—Christiania (*continued*).

Fjeldstrand, Tyvebøken, Svestastoen, Rogneskjoer, Spro, Humlesøkken, and Grisebu. On the west side—Nøesøen, Holmen, Leangen, Lökenas, Blakstad, Arnestad, Söestrand, Bjøestnøes, and Slemmestad. Belonging to Dröbak's pilotage district there are—On the east side—Digerhovedet, Sönderstoen, Baadshoen, and Hallangspollen. On the west side—Nøersness, Ramton, Hevik, and Verpen.

The ships loading at the places belonging to Dröbak's pilotage district are also at liberty to clear at Christiania if preferred. If, however, they have cleared at Christiania inwards, they must also clear there outwards.

As a rule all these places are well sheltered, with good anchorage and plenty of water for the largest ships.

The expenses are about the same as at Christiania, but no quay dues.

CHRISTIANSAND.

Christiansand, in lat. 58°9' N., long. 7°57' E., is on the S. coast.

Population.—16,000.

Imports.—Drapery, grocery, grain, flour, salt meat, salt, coal, and coke.

Exports.—Timber, deals, fresh and salted fish, lobsters, oak bark, paper, wood pulp, feldspar, and artificial nitrate.

Accommodation.—There is a large, well-sheltered, natural harbour, with good anchorage for vessels of any size. Good piers and quays, accommodating vessels up to 400 ft. length, with sufficient depth of water for any draught. The entrance to the harbour is about 4 miles long, straight, and with deep water everywhere, and well provided with lighthouses. There is no tide. Railway tracks run along the quays and on one of the piers. There are two cranes to lift two tons each. There is a graving dock 309 ft. long on the blocks, 39 ft. wide at the entrance, and 17 ft. deep on the sill. A shipbuilding and engine yard gives every facility for repairs. Divers are also stationed at the port. Bunker coal is always ready in lighters for immediate delivery. All kinds of provisions obtainable at moderate prices.

Pilotage.—Inward pilotage, from 36 kr. to 225 kr., according to size and draught; outward pilotage, about 60 per cent. of inward pilotage. If a good coast chart is on board, pilots are not needed in clear weather. Captains wishing a pilot can make agreement with them upon better terms than the pilotage rates, but in this case no pilot flag must be hoisted.

Port Charges.—Light and Harbour Dues :—About 90 ore per net reg. ton in; 60 ore per net reg. ton out. **Discharging** :—Coal, 50 ore; grain, 45 ore; general cargo, 50 ore per ton. **Loading** :—Deals and battens, 2 kr. 10 ore; boards, 2 kr. 50 ore per standard; wood-pulp, 50 ore per ton. **Labourage** :—50 ore per hour. **Mooring** :—Vessels loading wood generally pay 8 kr. (total) for mooring, instead of quay dues. **Quay Dues** :—From 1½ to 4 ore per reg. ton per day, according to size. **Clearance Fee** :—From 40 kr. to 100 kr., according to size and quantity loaded and discharged.

Pro Forma Charges on a steamer of 699 net reg. tons, inward, with a cargo of 1,310 tons coal, proceeding to another Norwegian port for loading :—

Norway—Christiansand (continued).

	Kr.	ore.
Inward pilotage	75	90
Customs officers' overtime	9	00
Harbour-master's dues	4	00
Inward light and harbour dues, about 90 ore per reg. ton	629	10
Harbour pilot and boats assistance	8	00
Discharge, 1,310 tons at 50 ore per ton	655	00
Quay dues, 5 days, at 11 kr. 50 ore	57	50
Clearance fee	75	00

1,513 50 = £84 1s. 8d.

Pro Forma Charges on a steamer of 560 net reg. tons, inward in ballast, and loading wood, 400 standards deals and battens, outward (draught inward 11 ft. 6 in., outward 14 ft. 8 in.).

	Kr.	ore.
Inward pilotage	57	50
Harbour pilot	5	00
Outward pilotage	33	72
Harbour-master's dues	4	00
Mooring	8	00
Outward light and harbour dues, 60 ore per reg. ton	336	00
Loading, 400 standards, at 2 kr. 10 ore	840	00
Clearance fee	50	00

1,334 22 = £74 2s. 6d.

CHRISTIANSUND.

Christiansund is in lat. 63°8' N., long. 7°45' E.

Population.—13,085.

Imports.—Salt, coal, iron, manufactured goods, and colonial produce.

Exports.—Cod-fish, herrings, cod-liver oil, fish, guano, and wood.

Accommodation.—The harbour is accessible to vessels of the largest size, having a depth at high water of from 37 to 140 ft., and at low water from 31 to 134 ft. The following are the principal quays:—

Vaage Kaien.—Length available for large vessels, 618 ft.; depth alongside at high water, 20 to 23 ft.; depth alongside at low water, 14 to 17 ft.; length available for small vessels, 180 ft.; depth alongside at high water, 10 to 16 ft.; depth alongside at low water, 4 to 10 ft.

Kirkeilmendingen.—Length, 192 ft.; depth at high water, 20 to 23 ft.; depth at low water, 14 to 17 ft.

Vestrealmendingen.—Length, 86 ft.; depth at high water, 18 to 21 ft.; depth at low water, 12 to 15 ft.

Norlandsalmendingen.—Length, 179 ft.; depth at high water, 23 to 25 ft.; depth at low water, 17 to 19 ft.

There are three cranes to lift from 1½ to 3 tons. There are four ordinary slips, but they are only suitable for small vessels.

Loading and discharging is done alongside wharves, where vessels can lie safely and are always afloat.

English and Scotch coal can always be obtained at moderate prices, quick dispatch day and night.

Pilotage.—A vessel of 344 reg. tons, drawing 14 ft., pays from Quitholm (from Ohna about 50 per cent. more):—

Inwards—	From April 1 to September 30, 55 kr. 75 ore.
„	October 1 to March 31, 70 kr. 80 ore.
Outwards—	„ April 1 to September 30, 26 kr. 70 ore.
„	October 1 to March 31, 33 kr. 80 ore.

Norway—Christiansund (*continued*).

Pilots can always be obtained from the north of Staat by hoisting the usual signals, and especially from Quitholm lighthouse. Vessels from the north ought to take a pilot from Veiholmen or Griphoelen. Harbour pilot for mooring, 5 kr. to 10 kr. ; boat and men, 4 kr. to 6 kr.

Port Charges.—Harbour Dues :—4 to 8 kr. per vessel. **Harbour Master** :—2 to 6 kr. per vessel, according to tonnage. **Tonnage Dues** :—10 ore per net reg. ton. **Bill of Health** to Spain, including Spanish manifest for a vessel of 800 reg. tons, 17 kr. 60 ore. Bill of health to Portugal, 36 kr. **Water** :—2 kr. per ton. **Ballast** :—Stone, 2 kr. per ton. **Maritime Declaration** :—Extending protest, 21 kr. **Survey of Hatches** :—12 kr. **Discharging** :—Coal, 50 ore per ton ; salt, 5 ore per 140 litres. **Custom House Dues** :—80 ore per ton inwards, 50 ore per ton outwards. **Brokerage** :—Entering, clearing, and doing the ship's business in the harbour, from 40 to 80 kr., according to the tonnage of the vessel. **Labourage** :—50 ore per hour.

Vessels calling only for provisions or coal are not obliged to take a pilot, and only pay 5 kr. to 7 kr. for harbour dues.

Pro Forma Charges on a steamer of 694 net reg. tons, 1,700 tons d.w., inclusive of bunkers, entering with a cargo of salt, and out in ballast :—

	Kr.	ore.
Pilotage, inwards	104	50
Harbour pilotage and boatmen	40	00
Survey of hatches	12	00
Cargo expenses and light dues	555	20
Exchange	13	88
Mooring, harbour master, tonnage dues	77	40
Measuring and discharging cargo	648	95
Pilotage, outwards	36	64

1,488 57 = £82 14s. 0d

DRAMMEN.

Drammen, in lat. 59°43' N., long. 10°11' E., stands at the head of the Drams Fiord, which flows into the W. side of Christiania Fiord.

Population.—26,000.

Imports.—Coal, limestone, flour, and grain.

Exports.—Wet and dry wood-pulp, paper, timber of all kinds, ice, etc.

Accommodation.—Vessels of 20 ft. draught can go close to the railway quay, and with a draught of 21 to 22 ft. the narrows at Svelvik can be passed. In spring, the freshes at Svelvik are strong, but can easily be passed with the help of a good tug, which is always to be had. In the winter the navigation is kept open by powerful ice-breakers. In the outer harbour there is a depth of water of 10 to 20 fathoms. In the inner harbour the depth of water is 13½ to 19½ ft. The quays are as follows :—

Bragerness Quay.—Length, 761 ft. ; depth of water alongside, 12 ft.

Railway Quays.—Length of upper quay, 1,026 ft. ; depth of water alongside, 14½ ft. Length of lower quay, 1,683 ft. ; depth of water alongside, 18½ ft.

Gyldenløves Plads Quay.—Length, 328 ft. ; depth of water alongside, 14 ft.

The depths of quayside given are at ordinary water level.

Norway—Drammen (*continued*).

There are two small cranes, and a large boiler crane. Vessels going to Bragerness Quay, or to the Upper Railway Quay, have to pass a bridge with a width of opening of 31½ ft. There is a patent slip with a lifting capacity of 130 tons. Repairs to machinery and boilers can be executed. Freights to the United Kingdom and Continent are nearly always to be had.

Port Charges.—Wharfage:—For loading, about 15 kr. per day, according to size of vessel; discharging, one-third less. **Ice-breaker Dues:**—10 ore per net reg. ton in, and the same out (payable from December 1 to March 31). **Stevedoring:**—Stevedores and crew for loading steamers are paid by St. Petersburg standards at the rate of 2 kr. 45 ore, daytime only; sailing vessels, 1 kr. 50 ore. For wet wood-pulp, steamers, 58 ore per ton; dry wood-pulp, 78 ore per ton; paper, 88 ore per ton. Discharging coals, 50 ore per ton; salt, 60 ore per ton; limestone, 54 ore per ton. Wood is loaded from the mills or brought down in lighters free alongside, and free of quay dues. Ballast is thrown overboard in the fiord without expense to the ship.

Tonnage and Light Dues.—See Norway.

Pro Forma Charges on a British steamer of 1,253 net reg. tons :—

	Kr. ore.	Kr. ore.
Inwards—		
Light dues at 80 ore per ton	1,002	40
Harbour dues, at 10 ore per ton	125	30
Pilotage from Færder to Rodtangen	120	00
Pilotage from Rodtangen to Drammen	33	25
Brokerage	100	00
Custom House officers (about)	15	00
Quay dues, 8 days at 10 kr. 60 ore per day	84	80
Discharging 2,500 tons of coal at 50 ore per ton	1,250	00
		<hr/> 2,730 75
Outwards—		
Light dues	626	50
Harbour dues	125	30
Town dues	37	59
Consular fee	2	28
Harbour master's fee	5	60
Pilotage to Færder	88	00
Brokerage	35	00
Postages and petties	5	00
Loading 2,500 tons wet wood-pulp at 58 ore per ton	1,450	00
Insurance of labourers (about)	55	00
		<hr/> 2,430 27
		<hr/> 5,161 02
		<hr/> = £286 14s. 6d.

DRÖBAK.

Dröbak is in lat. 59°40' N., long. 10°39' E.

Population.—2,230.

Import.—Coal.

Exports.—Ice and wood.

Accommodation.—The port is always accessible and is never closed by ice. Anchorage is in 12 to 15 fathoms of water. It is the best harbour in the Christiania fiord. There is 15 to 16 ft. of water at the quay-side. Steamship communication with Christiania day and night.

Norway—Dröbak (*continued*).

Pilotage.—Compulsory for vessels coming from foreign ports. Rates according to draught and distance. Vessels coming from the sea have to stop and exchange pilots at Dröbak.

Port Charges.—See **Christiania**. **Ballast** :—1s. 6d. per ton. **Labour** :—Cheap. **Towage** :—No fixed rate, but cheap.

Pro Forma Charges on a steamer of 356 reg. tons, ballast in, and cargo of ice out, drawing 16 ft. loaded :—

	Kr.	ore.
Harbour dues	4	00
Brokerage	60	00
Pilotage, in 60 kr.; out 12 kr.	72	00
Stevedore, 356 reg. tons at 60 ore per reg. ton	213	60
	349	60 = £19 8s. 5d.

DRONTHEIM, OR TRONDHJEM.

Drontheim, in lat. 63°26' N., long. 10°22' E., is situated on the fiord of the same name, at the mouth of the river Nid.

Population.—40,000.

Imports.—Coal, grain, salt, iron, and colonial produce.

Exports.—Wood, wood-pulp, ores, and fish.

Accommodation.—There are two dry docks, the largest being 310 feet long, 55 ft. wide at top, 40 ft. on blocks, and 15 ft. on sill at high water, and the smaller being 280 ft. long, 50 ft. wide at top, 40 ft. on blocks, and 14 ft. on sill at high water. There is a large well equipped iron ship-building yard (700 hands), with sheer legs to lift 60 tons, and there are also two smaller engineering works. There are three patent slips to lift 400, 400, and 500 tons respectively.

The Nordenfjeldske Salvage Company is located at Drontheim. It has three salvage steamers, provided with the best apparatus, lying ready to assist steamers in distress on the shortest notice.

The harbour is always free of ice, and has large and commodious quays with a total length of over 10,000 ft., for loading and discharging. Vessels of 20 to 21 ft. can discharge always afloat at low water; if of a greater draught, lighterage can be effected in the roads outside the mole, where there is sufficient water for the largest vessels. **Tides** :—Springs rise 8, neaps 6 ft. In the harbour there is one electric crane capable of lifting 30 tons, and steam cranes of 8 tons downwards. There are good warehouses with railway communication.

Pilotage.—Paid according to a tariff regulated to the draught of the vessel in question, in combination with her tonnage, and according to distance. The distances from the stations where pilots generally are taken are as follows :—

Ona	124	English nautical miles	} All to the South.
Fuglen	104	" "	
Grip	88	" "	
Tyrhong	68	" "	
Halten	72	" "	To the North.

Port Charges.—Light and Tonnage Dues :—Inward 80 ore, and outward 50 ore per net reg. ton, payable *pro rata* to the quantity actually

Norway—Drontheim, or Trondhjem (continued).

discharged and respectively loaded. For ballast or ore no light or tonnage dues are paid. **Harbour Dues**:—4 ore per net reg. ton inwards, and the same outwards. **Quay Dues**:—According to net reg. tonnage. **Ballast**:—Sand or stone about 2 kr. 50 ore per ton. **Clearing Charges**:—According to the size of the vessel. **Provisions**:—All kinds at moderate prices. **Water**:—From the boats, 2 kr. 70 ore per ton, but vessels moored alongside certain of the wharves can get water direct from the waterworks of the corporation at a lower price.

Pro Forma Charges on a steamer of 1,541 tons net reg., with 2,995 tons of grain inwards, and ballast outwards:—

	Kr.	ore.
Government pilotage from sea, compulsory	240	50
Light, tonnage, and harbour dues, inwards	1,294	44
Customs watches	149	40
Surveying hatches	9	50
Discharging	1,684	68
Harbour money	18	00
Harbour pilot, boat, and men, in and out	98	00
Government pilotage outwards, compulsory	55	38
Pilot to sea, as per agreement	100	00
Clearing ship, £5 5s.	94	50
	3,744	40 = £208 0s. 5d.

Pro Forma Charges on a steamer of 700 reg. tons, with a cargo of 1,500 tons of coal inwards, and 1,600 tons of ore outwards:—

	Kr.	ore.
Government pilotage from sea, compulsory	158	00
Light, tonnage, and harbour dues, inwards	588	00
Customs watches	69	50
Discharging	900	00
Harbour money and quay dues	119	05
Harbour pilot, boat, and men, in and out	60	00
Trimming of ore	50	00
Harbour dues, outwards	28	00
Government pilotage outwards, compulsory	40	00
Pilot to sea, as per agreement	60	00
Clearing ship	90	00
	2,162	55 = £120 2s. 10d.

Pro Forma Charges on a steamer of 602 tons net reg., with a cargo of 1,095 tons of coal inwards, and 850 tons of dry wood-pulp outwards:—

	Kr.	ore.
Government pilotage from sea, compulsory	151	00
Light, tonnage, and harbour dues, inwards	505	68
Custom watches	46	00
Discharging	657	00
Harbour money and quay dues	88	00
Loading 850 tons dry pulp	510	00
Harbour pilot, boat, and men, in and out	50	00
Government pilotage outwards, compulsory	36	00
Pilot to sea, as per agreement	60	00
Light, tonnage, and harbour dues, outwards	325	08
Clearing ship	80	00
	2,508	76 = £139 7s. 6d.

Pro Forma Charges on a steamer of 340 tons net register, with 696 tons of coal inwards, and 230 standards of sawn wood outwards:—

Norway—Drontheim, or Trondhjem (*continued*).

	Kr.	ore.
Government pilotage from sea, compulsory	116	00
Light, tonnage, and harbour dues, inwards	285	60
" " " outwards	183	60
Discharging	417	60
Customs watches	40	00
Harbour pilot, boat, and men, in and out	40	00
Harbour money and quay dues	48	40
Loading wood cargo	609	50
Government pilotage outwards, compulsory	26	88
Pilot to sea, as per agreement	50	00
Clearing ship	60	00

1,877 58 = £104 6s. 2d

HOMMELVIK, in lat. 63°25' N., long. 10°44' E., is about 8 nautical miles E. of Drontheim. There is a considerable export trade in wood. The harbour is excellent, always free of ice, and the largest vessels can load and discharge.

ORKEDALSÖREN, about 16 nautical miles W. of Drontheim, is also another outpost from which wood is exported. There is sufficient water for large vessels, and no ice.

STENKJAER is about 46 nautical miles N.E. of Drontheim, at the head of the Drontheim Fiord. In some winters this place is closed by ice from November to April, and in others it is open all the time. The shipping place is Eggebogen, where there is 18 ft. at low water, with a bottom of clay. Wood and wood-pulp are exported.

EKERSUND.

Ekersund, or Egersund, is in lat. 58°29' N., long. 6°0' E.

Population.—3,000.

Imports.—Coal, salt, china clay, etc.

Exports.—Fish, brown-ware, and white pottery ware.

Accommodation.—Ekersund has an excellent harbour, where ships may lie safely in all kinds of weather. The depth of water varies from 6 to 8 fathoms. The harbour is protected by the Ekero or Egero Island, and has two entrances—one to the N. and the other to the S.; both are provided with fixed lights, and are accessible in any weather. The inner harbour has an entrance 20 ft. deep. There is a steamboat quay 350 ft. long with from 18 to 20 ft. alongside. The depth alongside the store-houses in the inner harbour is from 13 to 14 ft. Provisions to be had at moderate prices.

Port Charges.—For **Tonnage, Pilotage, and Light Dues:**—See **Norway.** **Ballast:**—10d. to 1s. per ton f.o.b. Vessels going into Ekersund for refuge have to pay pilotage and ring money. Vessels only calling for coal and provisions need no pilotage.

From the neighbouring harbour (Skivoldvig), where the largest ships can lay close to the wharf, ironstone is exported.

FARSUND.

Farsund, in lat. 58°5' N., long. 6°44' E., is situated about 21 miles N.W. of the Naze.

Exports.—Fish and seaweed ash.

Norway—Farsund (continued).

Accommodation.—Inside the inner harbour there is 31 ft. of water. The depth of the outer harbour is 49 to 95 ft., with quays surrounding the whole with a depth of from 14 to 18 ft. alongside. Bunker coal is always to be had. Good tugboats are available. Small wooden vessels can be repaired.

Pilotage.—A pilot is necessary.

Port Charges.—**Ring and Harbour Money:**—4s. for small, and 6s. for large vessels. For **Tonnage and Light Dues:**—See **Norway.**

FLEKKEFIORD.

Flekkefiord is in lat. 58°20' N., long. 6°38' E.

Population.—2,500.

Imports.—Hides, salt, coal, bark, and bark extract.

Exports.—Leather, staves, barrels, and fish in ice.

Accommodation.—Flekkefiord has a very good harbour, where vessels can anchor close to the town in 10 to 17 fathoms. Vessels can be repaired and hove down. Provisions to be had at moderate prices.

Every vessel from a foreign port must deliver a manifest of cargo on board, and a list of provisions, etc., to the Customs authorities.

Port Charges.—**Port Dues and Light Dues:**—See **Norway.** **Labourers' and Carpenters' Wages:**—3 kr. per day. **Collecting Freight:**— $\frac{1}{2}$ per cent.; advancing money, 2 per cent. **Fresh Water:**—Free, if taken by ship's boat from the shore. **Clearance, etc.:**—20 kr. Commission on freight, $\frac{1}{2}$ per cent. **Ballast:**—1 kr. per ton. **Towage:**—Cheap, as per agreement.

FREDRIKSHALD.

Fredrikshald, in lat. 59°8' N., long. 11°22' E., is situated at the mouth of the Tistedalselv and Idefjord, about 60 miles S. of Christiania.

Population.—12,000.

Imports.—Coal, salt, and grain.

Exports.—Sawn and planed wood, props, pulp, and granite.

Accommodation.—The harbour has plenty of water and is perfectly safe and well sheltered from all winds. Vessels drawing 18 ft. can lie afloat alongside the quays, of which there are over 3,000 ft. At the principal loading place there is water for any size vessel. Fredrikshald is connected by rail with Christiania, and *via* Gothenburg and Helsingborg with the Continent. The port of Fredrikshald is as a rule open during the whole year. Wood pulp and props are generally loaded alongside the quay, where dues are charged. Granite is loaded from the different quarries on the Norwegian and Swedish side of the Idefjord. When loading on the Norwegian side, vessels are free of all dues, except ice dues in the winter. Small repairs can be executed.

Pilotage.—Per mile, and according to draught and reg. tonnage combined. Steamers, sailing vessels, and vessels in tow pay the same rate. The distance is reckoned from Færder light, and masters are bound to take the first pilot that hails the vessel, and declares himself the right pilot,

Norway—Fredrikshald (*continued*).

or two pilotages will be charged. Winter tax about 25 per cent. higher than in summer.

Vessels are compelled to use harbour pilots. Dues for the same : 2 kr. for vessels up to 100 tons reg., and 1 kr. for each additional 100 tons register. Pilot station at Færder Lighthouse.

Port Charges.—Quay Dues:—For discharging or loading, 4 ore per reg. ton ; if both discharging and loading, 2 ore per ton additional ; if part cargo is discharged or loaded, the dues are charged proportionally, but not on less than one-fifth of the reg. tonnage. When discharging or loading in the harbour, no quay dues are charged. **Towage:**—Cheap, and as per agreement. **Tonnage and Light Dues:**—88 ore per reg. ton for inward cargo, and 58 ore per reg. ton for outward cargo. Vessels in ballast, or loaded with granite or wood under 2 ft., are free. **Ballast:**—Stone or sand generally to be had at 1 kr. 50 ore to 2 kr. per ton. **Harbour Master's Fee and Ring Dues:**—From 4 kr. to 12 kr. per vessel. **Ice Dues:**—10 ore per reg. ton, during the time between January 1 and March 31. **Discharging or Loading** (steamers):—Coal, 60 ore per ton ; wood, 2 kr. to 2 kr. 50 ore per standard ; wood pulp, 60 ore per ton ; granite setts and macadam, 45 ore ; curb stones, 50 ore ; block stones, 65 ore. Sailing vessels the same, except wood, 1 kr. 25 ore per standard. **Dispatch** (steamers):—Coal, 200 tons ; wood, 70 to 100 standards ; wood pulp, 250 tons ; granite, 200 to 250 tons, according to hatches, per working day of 10 hours. Overtime from 7 p.m. to 6 a.m., 25 ore extra per man per hour. **Brokerage:**—2½ to 5 per cent., and **Clearance** according to size and intake, etc., as per tariff. **Fresh Water:**—1 kr. per 100 gallons. **Provisions:**—Cheap.

Pro Forma Charges on a Norwegian steamer and sailing vessel of 540 reg. tons, ballast in and wood out :—

STEAMER.

	Kr.	ore.		Kr.	ore.
Pilotage inwards, 8 ft. 10 in. to 9 ft. 10 in., summer tax	57	40	Winter tax	72	90
Harbour pilot	7	00			
Customs officer, inwards	9	00			
Stevedore, 350 standards, floorings, at 1 kr. 60 ore	560	00			
Tonnage and light dues	313	20			
Pilotage to sea, 14 ft. 9 in. to 15 ft. 9 in.	41	80	„ „	53	28
Harbour master and ring dues	7	60			
Clearance	50	00			

1,046 00 = £58 2s. 3d.

Ice dues, if winter time, 54 kr.

SAILING VESSEL.

	Kr.	ore.		Kr.	ore.
Pilotage inwards, 10 ft. 10 in. to 11 ft. 10 in., summer tax	62	20	Winter tax	79	10
„ in harbour	7	00			
„ „ shifting	7	00			
Stevedore, 280 standards at 1 kr. 25 ore	350	00			
Tonnage and light dues	313	20			
Pilotage to sea, 14 ft. 9 in. to 15 ft. 9 in.	41	80	„ „	53	28
Harbour master and ring dues	7	60			
Towage in	50	00			
„ in harbour	10	00			
„ out	80	00			
Clearance	25	00			

953 80 = £52 19s. 10d.

Ice dues, if winter time, 54 kr.

Norway.

FREDRIKSSTAD.

Fredriksstad, in lat. 59°12' N., long. 11°0' E., is situated at the mouth of the river Glommen, about 70 miles from Christiania.

Population.—16,000.

Imports.—Coal, coke, iron, textiles, general provisions, machinery, electric plant, etc.

Exports.—Flooring boards and other kinds of timber, granite, sawdust, condensed milk, oxalic acid, acetic acid, smoked herrings, paper, wood-pulp, and different kinds of manufactured goods.

Accommodation.—Fredriksstad has two excellent harbours, called the East and West River. There is sufficient water in the East River for vessels drawing 28 ft., and in the West River for vessels drawing 20 ft., at all times. Both rivers are open for navigation all the year round. There is a floating dock for repairs capable of taking vessels of about 50 ft. in width, and about 3,000 tons d.w. There are three available slips for building steamers up to 300 ft. in length and 50 ft. in breadth; an electric crane with a lifting capacity of 100 tons, radius of jib 28 ft., lifting height above water 65 ft.; a crane to lift 8 tons, and one to lift 7 tons. Vessels drawing more than 12 ft. cannot use the cranes.

Pilotage.—Pilots are generally to be seen outside Føerder lighthouse. Rates according to tonnage and draught of water combined. Winter rates from October 1 to March 31, 25 per cent. higher than summer rates.

Port Charges.—Tonnage and Light Dues:—80 ore per reg. ton with cargo inwards, and 50 ore per reg. ton outwards with cargo. Vessels coming in ballast have nothing to pay inwards. Vessels loading granite and firewood, under 24 inches, are free from tonnage and light dues. **Ice Dues:**—During January, February, and March, 4½ ore per reg. ton. **Towage:**—As per agreement.

Pro Forma Charges on a sailing vessel of 2,200 reg. tons (loading about 1,000 St. Petersburg standards):—

	Kr.	ore.
Inward pilotage, 15 ft., summer tariff (about)	130	00
Harbour master's dues	25	00
Harbour dues, 10 ore per reg. ton	220	00
Tugboat inwards, £8	144	00
" outwards, £25	450	00
Harbour pilot	30	00
Stevedore, 1,000 standards at 2 kr. per standard	2,000	00
Tonnage and light dues, 50 ore per reg. ton	1,100	00
Outward pilotage, 20 to 22 ft., summer tariff (about)	150	00
Discharging ballast, 350 tons at 30 ore	105	00
Clearing ship, 10 ore per reg. ton	220	00

4,574 00 = £254 2s. 2d.

Pro Forma Charges on a steamer, measuring about 1,000 to 1,200 tons d.w. (loading about 325 standards):—

	Kr.	ore.
Inward pilotage, 12 ft., summer tariff (about)	60	00
Harbour dues, 560 reg. tons, at 10 ore	56	00
Harbour master's dues	20	00
Harbour pilot	12	00
Stevedore, 325 standards at 2 kr. 25 ore per standard	731	25
Tonnage and light dues at 50 ore per reg. ton	280	00
Outward pilotage, about 15 ft.	40	00
Clearing vessel	85	00

1,284 25 = £71 6s. 11d.

Norway.**GRIMSTAD.**

Grimstad is in lat. 58°21' N., long. 8°34' E.

Population.—3,500.

Import.—Coal.

Exports.—Timber, deals, battens, and pit-props.

Accommodation.—The harbour is good, and has a depth of from 6 to 20 fathoms over clay and ooze. The best holding ground is in the inner part of the harbour, between Torskeholm and Boddén, where there is a depth of 10 fathoms, decreasing regularly towards the land. There is 427 ft. of quayage; 220 ft. with from 21 to 25 ft. alongside, 83 ft. with 17 ft. alongside, and 124 ft. with 16 ft. alongside. There is a crane to lift 1 ton. There are wooden shipbuilding yards where vessels can be hove down and repaired.

Pilotage.—According to the draught and tonnage of a vessel. For a vessel of 800 net reg. tons :—

<i>Summer rates—</i>				Inwards.		Outwards.		<i>Winter rates—</i>				Inwards.		Outwards.	
Draught in ft.				Kr. ore.		Kr. ore.		Draught in ft.				Kr. ore.		Kr. ore.	
10 to 11	..	41	50	..	24	90		10 to 11	..	52	40	..	31	44	
14 „ 15	..	47	50	..	28	50		14 „ 15	..	60	00	..	36	00	
18 „ 19	..	53	50	..	32	10		18 „ 19	..	67	60	..	40	56	
22 „ 23	..	59	50	..	35	70		22 „ 23	..	75	20	..	45	12	
26 „ 27	..	65	50	..	39	30		26 „ 27	..	82	80	..	49	68	

Intermediate draughts at rate *pro ratio*.

Port Charges.—Tonnage and Light Dues:—Inwards, 80 ore per 1,500 kilos. (1½ tons), discharged; outwards, 50 ore per 1,500 kilos., loaded. There are no port or town dues.

GULDSMEDVIK.

Guldsmedvik, in lat. 66°20' N., long. 14°0' E., is situated at the head of the Ranen Fiord, about 42 miles from Sandnesjoen, which is on the main steamer route from Trondhjem to Hammerfest, and at the mouth of the Dunderland river. It is the shipping port for the produce of the Dunderland Iron Ore Co. Ltd.

Export.—Iron ore briquettes.

Accommodation.—It is a natural and safe harbour, sheltered from all winds, except straight up the Fiord, with a depth over the whole harbour of 24 ft. water at the lowest tides, and 35 ft. at high tide. The coast is provided with a most elaborate system of lights by the Government. Steamers bound to the port generally telegraph from the point on the coast to which they make for a pilot. The Fiord and harbour are open all the year round. The shipping arrangements admit of loading briquettes at the rate of 1,000 tons per 24 hours. On the S.E. side are two loading berths each 400 ft. in length and 40 ft. wide. Adjoining the place of shipment is the stage at which steamers discharge. The stage itself is 90 ft. wide, with two railway tracks, and is provided with a crane capable of lifting up to 25 tons and delivering on to the rail alongside. The discharging berth is 364 ft. long, with 24 ft. alongside at low water. Coal can be discharged at the rate of 600 tons per day. Ships stores, fish, etc., are obtainable at Mo Ranen, which is 1½ miles from Guldsmedvik.

Vessels have to have an anchor out whilst lying at the pier or jetties, and to be ready to heave from the wharf in case of heavy weather. No vessel is allowed to lie at the wharf more than half an hour after she has

Norway—Guldsmedvik (continued).

finished loading or discharging if another vessel is waiting to take her berth. No ashes or refuse of any kind are to be thrown overboard whilst lying at the moorings or wharf, under a penalty of 10 kr. for each offence.

Pilotage.—The harbour pilot will row out and meet incoming vessels on their arrival off the harbour. Charge for bringing a vessel to her moorings at the jetties, buoys or other anchorage, or pier, as required, or bringing a vessel from her moorings to the pier for loading or discharging, 2 ore per net reg. ton, minimum 15 kr. If similar services outwards be required, a further charge of 2 ore per net reg. ton (minimum 15 kr.) will be made. If the mooring boat be used, a charge of 10 kr. will be made for each time.

Port Charges.—Harbour Dues:—10 ore per net reg. ton. If available the Dunderland Iron Ore Co. Ltd., place their steam-tug at the disposal of vessels, for assistance in mooring, swinging, shifting, etc., in the harbour, for a charge of 5 ore per net reg. ton (minimum 30 kr.) for each time used. **Towing:**—Hawser has to be found by the vessel assisted.

Pro Forma Charges on a steamer of 1,155 net reg. tons (draught 24 ft.) with 2,184 tons of coal in, and iron ore briquettes out:—

	Kr.	ore.
Government tonnage and light dues at 80 ore per reg. ton	924	00
Quay dues, 10 ore per reg. ton	115	50
Customs watch	28	00
Custom House overtime (clearance out of office hours)	4	00
Inward pilotage	175	41
Harbour pilotage at 2 ore per reg. ton	23	10
Outward pilotage	110	75
Mooring boat (twice)	20	00
Discharging at 70 ore per ton	1,528	80
Trimming (tweendecker, otherwise none required)	160	20
Agency	100	00
Telegrams	6	85

3,196 61 = £177 11s. 8d.

N.B.—Vessels coming in ballast to load ore do not at present pay tonnage and light dues.

HAMMERFEST.

Hammerfest is in lat. 70°40' N., long. 23°50' E.

Population.—2,500.

Imports.—Grain, coal, coffee, sugar, tobacco, gunpowder, salt, etc.

Exports.—Dried, salted and fresh cod-fish, herrings, oils, reindeer skins, eider-down, fox skins, copper, etc.

Accommodation.—The anchorage is close to the town in 20 fathoms, and is perfectly safe. The steamship quay is 250 ft. long, with 37 ft. at high water, and 25 ft. at low water, alongside. Vessels are moored to floating buoys. Vessels can discharge without lighters direct into the warehouses and on to the wooden piers at a maximum rate of 300 tons a day, the depth alongside being 27 ft. at high, and 15 ft. at low tide.

Hammerfest is visited during the summer time daily by steamers from Christiania and Hamburg, and during the winter four times a week from Bergen. Wooden vessels can be repaired or strengthened for ice navigation.

Port Charges.—See Norway with special charges for this port.

Stone Ballast.—1s. 6d. per ton, delivered on board.

Norway.**HAUGESUND.**

Haugesund is in lat. $59^{\circ}25'$ N., long. $5^{\circ}12'$ E. The town is situated in the northern entrance of Karmsund.

Population.—8,000.

Imports.—Coal, salt, and timber.

Exports.—Iced and cured herrings, pyrites, etc.

Accommodation.—There is sufficient water for ships drawing up to 22 ft. in the harbour. The roadstead is perfectly safe and sheltered against all winds, and has sufficient room and depth of water for the largest ships. There is a patent rail dry dock capable of hauling up vessels of 1,800 tons displacement (3,000 tons d.w.), length of cradle 260 ft., depth of water over the keel blocks, forward, 11 ft.; aft, 16 ft. There is a shop for repairing iron and wooden vessels and a small patent slip to lift 350 tons. There are two entrances to Haugesund, either from Skudesnaes or Utsire, the minimum depth of the S. entrance is 21 ft. and the N. 24 ft. Vessels from foreign ports must deliver a manifest of their cargo and a list of their stores to the Custom House officers. Bunker coal can be had at any time in the harbour as well as in the roadstead. Provisions of all kinds at moderate prices. Water can be had at any time from a steam launch.

Pilotage.—For vessels bound for the fiords north of Norway, Archangel, or the White Sea, Haugesund is the best place to obtain qualified coasting pilots, who will meet the ship on application at Skudesnaes or Kopervik. A pilot to the White Sea and back will cost about £15. Pilots are also in attendance at Utsire.

Port Charges.—Tonnage and Light Dues:—See **Norway. Harbour Dues:**—8 ore per ton. Vessels in ballast do not pay these dues. **Stevedore:**—Stowing herring barrels, 3 kr. per 100; discharging salt, 4 kr. per 100 barrels of 140 litres; coal, 30 ore per ton.

Vessels calling for a pilot, stores, or bunker coal, pay no dues.

Pro Forma Charges on a steamer of 983 reg. tons, coming from Trapani with a full cargo of salt, and leaving for Blyth in ballast:—

	Kr.	ore.
Pilot in	117	20
Customs officers from Hoievarde, 6 kr. 65 ore + 5 kr.	11	65
Harbour pilot	10	00
Tonnage and light dues	865	04
Tugboat assistance	5	00
Mooring	9	35
Harbour master	4	80
Boatman in and out	15	00
Discharging cargo	675	44
Hire of tubs and shoots	82	54
Pilot out	43	08
Telegrams, telephone, and postage, etc.	12	20
Clearance	60	00

1,911 30 = £106 3s. 8d.

HOLMESTRAND.

Holmestrand is in lat. $59^{\circ}28'$ N., long. $10^{\circ}18'$ E.

Population.—2,700.

Imports.—Coal and coke.

Norway—Holmestrand *(continued)*.

Exports.—Paper, wood pulp, deals, props, condensed milk, and cream.

Accommodation.—The depth of water in the inner port is 17 ft. ; in the outer port 62 to 94 ft. The railway quay is 103 ft. long, the steamship quay is 216 ft. long, and the other quays 700 ft. long, all having a depth alongside of from 19 to 21 ft. There are no tides.

Pilotage.—Compulsory for vessels coming from or leaving for foreign ports. The obligation to have a pilot ceases at the anchorage in the fiord. Charges according to tariff—which during the winter months, i.e., from September 16 to April 15 inclusive, is 25 per cent. higher than during the summer.

Port Charges.—**Wharfage** :—For 300 reg. tons, 6 kr. 45 ore, and a further 1 ore per ton per day. **Towage and Boat Hire** :—As per agreement.

Light Dues :—In, 80 ore per reg. ton ; out, 50 ore per reg. ton. **Labour** :—About 3 kr. 50 ore per day. **Brokerage** :—As per arrangement. All the wharves are private property—vessels that do not use any of them, but

load inside the mole in the inner harbour, pay 9 ore per reg. ton for berth, whether long or short, up to one month. Vessels that barely require a day obtain a reduction of 35 per cent., for 2 days 25 per cent., and for 3 days 10 per cent. If they stay longer they pay the full rate, 9 ore per reg. ton, without reduction. **Tonnage Dues** :—Vessels with cargo to or from foreign ports, 10 ore per ton loaded or discharged but in no case to exceed the registered tonnage of the vessel.

HORTEN.

Horten, in lat. 59°25' N., long. 10°30' E., is a Royal Marine establishment, 5 miles N. of Aasgaardstrand.

Accommodation.—Anchorage outside in 4 to 6 fathoms. Inside the marine harbour it is well sheltered.

KIRKNAES.

Kirknaes is on Bogfjord, near Vadso.

Population.—About 1,000.

Accommodation.—This port has only been opened recently. There is a good depth of water in the harbour. A railway connects with the iron works which the port has been constructed to serve.

Pilotage.—Compulsory. Charges as per the Norwegian Government tariff.

Port Charges.—Same as at Vadso. **Ballast** :—About 1s. **Labour** :—4s. 6d. per day.

KLEVEN.

Kleven, in lat. 58°1' N., long. 7°28' E., is a little to the E. of Mandal.

Accommodation.—Kleven is one of the best harbours of refuge on the S. coast of Norway. Vessels can get in or out with all winds from S.W. round northerly to E., so that it is equally useful to vessels going E. or W., forced in by contrary winds. There is from 14 to 25 fathoms of water close to the shore. There is a quay 620 ft. long, with 14 to 16 ft. alongside, and another 1,240 ft. long, with 12 to 18 ft. alongside, and 18 to 22 ft. a few yards from the side. Repairs can be effected to wooden ships,

Norway—Kleven (*continued*).

and provisions can be obtained at moderate prices. The harbour is always free of ice. A supply of coal for steamers is always in readiness.

Pilotage.—For a vessel of 250 reg. tons, drawing 12 ft., 29 kr. 65 ore in (summer tax), and 15 kr. 90 ore out (altogether about £2 10s.). No other charges.

KOPERVIK.

Kopervik is in lat. 59°20' N., long. 5°17' E.

Population.—About 1,300.

Import.—Coal.

Export.—Salted herrings.

Accommodation.—There is sufficient water in the harbour for the largest ships. There is a depth of water alongside the warehouses of from 9 to 25 ft.

Pilotage.—Compulsory.

Port Charges.—**Light and Tonnage Dues** :—See **Norway**.

Pro Forma Charges on a steamer of 294 reg. tons, with a cargo of coal in and ballast out, drawing 14 ft. loaded :—

	Kr.	ore.
Harbour and light dues at 88 ore per reg. ton	258	72
Brokerage	25	00
Pilotage, in 43 kr. 75 ore; out, 18 kr. 19 ore	61	94
Boat hire	6	00
Discharging 610 tons of coal at 40 ore per ton	244	00
Hire of tubs	18	30
Harbour master's fees	2	00
Wharfage, 1 ore per reg. ton.	2	94

618 90 = £34 7s. 8d.

KRAGERÖ.

Kragerö is in lat. 58°52' N., long. 9°22' E.

Imports.—Coal, coke, pig-iron, and lime.

Exports.—Ice, timber, deals, props, minerals, wood-pulp, and calcium carbide.

Accommodation.—The harbour has sufficient water for vessels drawing 23 ft. There is a steamboat quay 200 ft. long. Steamers of 600 tons burden have been loaded in one day. Bunker coal is always to be had. Provisions and water are plentiful and cheap. Expenses are small. Repairs to steamers on a small scale can be executed, but sailing vessels can be repaired in an efficient manner. Diving apparatus can be obtained at short notice.

Port Charges.—**Loading** :—Ice, 40 ore per reg. ton for sailing vessels, 60 ore per reg. ton for steamers; wood-pulp, 55 ore per ton. **Brokerage** on charters, 25 ore per reg. ton for sailing vessels; 3 per cent. of the freight for steamers.

Expenses on a steamer of 245 reg. tons, ballast in and ice out, 208 kr., commission on charter excluded.

Norway.

LANGESUND.

Langesund, in lat. 59°0' N., long. 9°42' E., is a small place at the sea entrance of the fiord leading up to Brevig, Porsgrund, and Skien.

Population.—About 1,400.

Import.—Coal.

Exports.—Timber, ice, and fish.

Accommodation.—The harbour consists of three ports—Langesund (South), depth of water 13 fathoms; Langesund (North), depth of water 9 fathoms; Kongshavn (inner), depth of water 10 to 15 fathoms. There are two quays, the North Quay having 13 to 14 ft. alongside, and the South Quay 19 ft. There are no cranes.

This port is much used as a harbour of refuge. Lifeboat station with large sailing sloop. There is a lighthouse on Long Island. Tugboat station here. There are several outlying places for loading lake block ice. The Customs officers at Langesund board all ships coming in here, whether bound for Langesund or neighbouring ports and manifests must be ready. There is steamer communication daily E. and W.; also telegraph and telephone stations.

LARVIK.

Larvik is in lat. 59°3' N., long. 10°5' E.

Population.—10,668.

Imports.—Coal, grain, coke, phosphate, silver sand, potatoes, ship stores, etc.

Exports.—Timber, deals, planed boards, props, block ice, fish, hay, and granite.

Accommodation.—Vessels anchor two cable lengths from the shore, in 13 fathoms, on sand. The harbour is open to the S., and gales from S.S.E. to S. sometimes in the winter throw in a heavy sea; but vessels well found in anchors and chains never go adrift. The port is open in the winter. There are two quays for discharging coal, grain, etc., 400 and 506 ft. long, with from 15 to 27 ft. of water alongside. There are also two smaller inner harbours with 12 ft. of water. There is a crane to lift 3 tons, one to lift 5 tons, and one to lift 15 tons.

At the entrance of the Larvik Fiord is the safe refuge port of **Hölen**, well sheltered, having wharves and warehouses for discharging, and facilities for repairing vessels.

There are two tugboats. Railway communication with Christiania.

Port Charges.—Quay Dues:—4 ore per reg. ton per day.

Stevedoring:—

	Sailers.	Steamers.
Partially square timber mining poles	2 kr. per std.	2 kr. 10 ore per std.
Spars	2 kr. per std.	
Deals and battens	1 kr. 45 ore per std.	1 kr. 90 ore per std.
Props (3 in. or stouter)	1 kr. 35 ore per std.	1 kr. 60 ore per std.
„ smaller	1 kr. 55 ore per std.	1 kr. 90 ore per std.
Staves, 20 in. and longer	2 kr. 10 ore per std.	
„ shorter	2 kr. 35 ore per std.	
Planed boards and scantlings	1 kr. 60 ore per std.	2 kr. per std.
Firewood, etc.	2 kr. per fathom.	
Coke	60 ore per ton.	
Phosphate	45 ore per ton.	45 ore per ton.
Coal	45 ore per ton.	45 ore per ton.
Grain	45 ore per ton.	45 ore per ton.
Salt, sand, or potatoes	43 ore per ton.	45 ore per ton.

Pilot in	Kr.	ore.
Boat and boatmen	98	90
Harbour pilot in and unmooring	5	00
Nomination of surveyors for hatches	18	00
Hatchway survey	1	50
Light and tonnage dues	8	00
Quay dues and harbour master, 4 ore per reg. ton per day	1,007	06
Custom overtime	333	28
Stevedoring for use of lamps	82	50
„ discharging cargo, 2,800 tons	12	00
Pilot outwards	1,260	00
Consulate	45	62
Brokerage, 7 ore per ton d.w., discharged	2	27
Telegrams, etc.	196	37
	17	00

3,087 50 = £171 10s. 7d.

	Kr.	ore.
Pilotage in, winter (summer a little less)	64	40
" out, " " " "	35	45
Custom House " " " "	355	18
Towing, in	40	00
Discharging 680 tons coal at 45 ore	306	00
Broker clearing—10 ore per reg. ton	41	30
Wharfage, 4 ore per reg. ton per day, and harbour-master 3 kr.	135	16

977 49 = £54 6s.1d.

Harbour dues	250	00
Brokerage	35	00
Pilotage, in and out	68	50
Boat hire	4	00

Carried forward.	357	50
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Norway—Lillesand (*continued*).

Brought forward	Kr.	ore.
	357	50
Loading charges at 2 kr. 20 ore per std.	660	00
Wharfage	18	00
Mooring	8	00

1,043 50 = £57 19s. 6d.

LÖDINGEN.

Lödingen is in lat. 68°24' N., long. 16°0' E.

Import.—Coal.

Accommodation.—Lödingen has a very good harbour, with from 6 to 20 fathoms of water on good holding ground. It is well sheltered and very easy of access. Spring tides rise 10 to 12 ft. Small vessels discharge coal alongside the wharf in about 14 ft. at low water.

Pilotage.—Compulsory for vessels coming from foreign ports. There is a pilot station at the lighthouse. Rates according to the draught of vessel.

Port Charges.—**Light Dues and Harbour Dues** :—See **Norway**.
Ballast :—About 1 kr. per ton. **Labour** :—40 to 50 ore per hour.
Brokerage :—About 30 kr., according to the size of the vessel. **Boat Hire** :—8 kr.

Pro Forma Charges on a steamer of 1,000 tons reg., with a cargo of coal in, and ballast out, drawing 17 ft. loaded :—

Harbour and light dues	Kr.	ore.
	790	00
Brokerage	30	00
Pilotage in and out	125	00
Boat hire	8	00

953 00 = £52 18s. 11d.

LYNGOER.

Lyngoer is in lat. 58°39' N., long. 9°11' E.

Export.—Ice.

Accommodation.—The harbour is small, but has a sufficient depth of water for any size of ship, and is a good refuge for vessels wind bound. There is no Custom House, and vessels have to clear at Risoer. Repairs can be effected. Coal is supplied at short notice.

Pilotage.—Pilots can always be obtained outside.

Pro Forma Charges on a vessel of 360 reg. tons, ballast in and cargo out :—

Pilotage in, 10 ft.	Kr.	ore.
	30	00
Mooring rings	4	00
Pilotage out, 16 ft.	25	00

59 00 = £3 5s. 6d.

MANDAL.

Mandal, in lat. 58°2' N., long. 7°28' E., the most southern town in Norway, is situated 3½ miles from the Naze, at the mouth of the river Mandal.

Population.—4,000.

Norway—Mandal (*continued*).

Exports.—Boards, mining timber, pit-props, birch staves, bark, lobster, and salmon.

Accommodation.—The depth of Mandal river is from 12 to 13 ft., and there is 930 ft. of quayage. Mandal has two excellent harbours—Kleven, a little to the E., and Risorbank, a little to the W., to which access from the sea is very easy, with the Ryvingen lighthouse on the right hand and, later on, the Hatholmen light on the left hand. Risorbank is an excellent and roomy harbour, with very good anchorage, and with easy access in and out for vessels up to 18 ft. draught. Large vessels can anchor in the roads outside.

Pilotage.—Vessels from and to foreign ports calling for bunker coal or provisions are free of pilotage, unless a pilot is used.

MOLDE.

Molde is in lat. 62°45' N., long. 7°9' E.

Population.—2,000.

Imports.—Salt, coal, grain, and flour.

Exports.—Herrings, salt fish, guano, and granite.

Accommodation.—The depth of water in the harbour is from 6 to 12 fathoms; alongside the warehouses, 15 ft. at high water and 10 ft. at low. Spring tides rise 7 ft., and neap tides 5 ft. The depth of water alongside the quay, which is 537 ft. long, is from 18 to 22 ft. at low tide.

Pilotage.—Compulsory for vessels from foreign ports. Rates according to tonnage and draught.

Port Charges.—**Wharfage**:—2 ore per reg. ton. **Light Dues and Tonnage Dues**:—80 ore per reg. ton inwards, and 50 ore per reg. ton outwards. **Labour**:—From 3 kr. 50 ore to 4 kr. per day. **Brokerage**:—As per agreement.

Pro Forma Charges on a steamer of 541 reg. tons, with a cargo of coal in, drawing 15 ft., and ballast out, drawing 10 ft.:—

	Kr.	ore.
Harbour dues	12	00
Brokerage	20	00
Pilotage in and out	115	00
Light dues and tonnage dues	432	00
Labour, discharging coal at 50 ore per ton	400	00

979 00 = £54 7s. 9d.

MOSJÖEN.

Mosjöen, in lat. 65°56' N., long. 13°0' E., is on Vefsen Fiord.

Exports.—Deals and boards.

Accommodation.—This port is usually free of ice all the year round. The channel inwards is narrow, but there is sufficient water for the largest ships. It is not advisable for sailing vessels to enter later in the year than September.

The loading-place is at the head of Vefsen Fiord, in 40 to 50 ft. of water, about half a cable's length from the quay, which is 410 ft. long. Vessels should be well found in cables, etc., as there are frequent gusts of wind from

Norway—Mosjøen (continued).

the gullies on the opposite side of the fiord, and strong currents. Ballast is thrown overboard.

Steamers passing N. and S. every week are usually to be had for towage. Provisions are cheap.

Pilotage.—Shipmasters should always obtain a pilot off Villa light.

MOSS.

Moss, in lat. $59^{\circ}27'$ N., long. $10^{\circ}40'$ E., is situated on the Christiania Fiord, 32 miles south of Christiania.

Population.—10,000.

Imports.—Coal and grain.

Exports.—Paper, wood-pulp, and wood.

Accommodation.—The harbour is well sheltered, with a depth of 17 to 23 ft. at the quays, which are 1,500 ft. long. There are two entrances, the shortest is through a canal with a depth of 17 ft. ; the other is round the Jelo island and is about 10 miles longer. This is the usual entrance, as it is available for vessels of any draught. Small repairs to hull and machinery can be done at the shipbuilding yard, where vessels up to 150 tons are constructed. There are two floating docks. The first has 142 ft. of available docking length, is 45 ft. wide at the entrance, 15 ft. deep on the blocks, and has 800 tons lifting power. The other has 108 ft. of available docking length, is 45 ft. wide at the entrance, 15 ft. deep on the blocks, and has a lifting power of 500 tons. These docks can be used in conjunction. There are three patent slips with lifting powers of 250 and 500 tons, the third one being for small vessels.

Pilotage.—Pilots can always be obtained at Færder lighthouse, at the entrance of the Christiania Fiord. Rates according to a tariff regulated according to tonnage and draught. A vessel of 264 reg. tons, summer tariff, 56 kr. 88 ore ; winter, 25 per cent. more (October 1 to March 31.).

Port Charges.—**Light Dues :**—80 ore per reg. ton inwards, 50 ore outwards with cargo.¹ **Tonnage Dues :**—10 ore per reg. ton inwards, 10 ore outwards with cargo. **Harbour Master's Fee :**—From 2 kr. to 6 kr., according to size. **Quay Dues :**—10 ore per reg. ton, plus 8 kr. 15 ore per vessel. **Canal Dues :**—According to tariff. For 400 reg. tons : in ballast, summer, 14 kr. 90 ore ; winter, 23 kr. 13 ore ; loaded, summer, 22 kr. 35 ore ; winter, 34 kr. 70 ore.

Stevedoring :—

STEAMERS:— Loading.

Bran	45 ore per ton.
Wood-pulp	60 " "
Paper	70 " "
Spaths	60 " "
Spirit	50 " "

Discharging.

Grain	50 ore per ton.
Coal	50 " "
Glauber salt	50 " "
Sand	45 " "
Rice	50 " "
Flour	45 " "
General cargo	50 " "

SAILING VESSELS:— Loading.

Spaths 45 ore per ton.
Wood according to tariff.
Ice " "

Discharging.

Coal	40 ore per ton.
Salt	40 " "
Glauber salt	50 " "

Brokerage :—For steamers discharging less than 500 tons d.w., 50 kr. ; for each additional ton up to 1,500 tons d.w., 5 ore per ton extra ; for full

¹ Ice is free of light dues.

Pro Forma Charges on a steamer of 1,331 reg. tons, arriving with a cargo of grain, and leaving in ballast :—

	Kr.	ore
Light dues at 80 ore per reg. ton	1,064	80
Pilotage from Færder, draught 20 ft.	172	20
Harbour pilot	10	00
Survey of hatches	8	80
" "	1	50
Boatmen, in and out	10	00
Telegrams, postage, etc.	20	00
Brokerage	120	00
Consul	2	28
Discharging at 50 ore	1,464	25
Tonnage dues	133	10
Canal out (ballast, winter fee)	65	03
Quay dues	141	25
Harbour dues	6	00
Noting protest	28	80
Outward pilot	77	96
Board for Customs officer, 6 days at 3 kr. per day	18	00
	3,343	97 = £185 15s. 6d.

NAMSOS.

Population.—2,500.

Imports.—Coal, salt, and grain.

Exports.—Deals, battens, boards, herrings, etc.

Accommodation.—The depth of water in the port varies from 10 to 30 fathoms, and there is good anchorage close to the town. There is 800 ft. of quayage with from 18 to 28 ft. alongside. Wooden vessels can be repaired, as shipbuilding is carried on.

Pilotage.—The distance from Namsos to the sea is about 28 miles. Pilots can always be obtained at Villa. Charges, according to agreement—for a vessel of 300 to 400 reg. tons, from Villa lighthouse, about £7 in, and the same out. Pilots have to stay on board two days without extra pay; after that time, 5s. 6d. per day. Vessels bound for the Statland Sawmills (12 miles), and for the Bangsund Sawmills (8 miles below Namsos, in the Namsen Fiord) get pilots at Villa disused lighthouse. Vessels destined for Salsbruket's Sawmills, at the head of the Oplø Fiord, as well as for the North of Europe Land and Mining Company's Sawmills, at the head of the Vefsen Fiord, can also get their pilots at Villa. Steam-tugs can be obtained.

Port Charges.—Discharging and Loading :—Discharging coal, about 8*d.* per ton ; lighters of 15 to 20 tons, 5*s.* per day ; labour, 4*s.* per day ; stowing wood, about 6*d.* per St. Petersburg standard. **Mooring to Buoy :—**4*s.* 6*d.* per day. **Harbour Dues :—**7*s.* for a vessel of 200 tons register. **Light and Tonnage Dues :—**Loaded inwards, 11*d.* ; and outwards, 7*d.* per reg. ton. In ballast, free. **Coal :—**20*s.* per ton ; beef, 5*d.* per lb. Provisions in general not expensive. **Sand Ballast :—**Cheap. **Commission :—**On shipping, 2½ per cent. ; on collection of freight, ½ per cent.

Norway.

NARVIK.

Narvik is in lat. 68°30' N., long. 17°45' E., and lies at the eastern termination of Ofotenfiord, a branch of the Vestfiord.

Population.—5,000.

Imports.—Coal, coffee, sugar, flour, machinery, hardware, and other general merchandise.

Export.—Iron ore.

Accommodation.—The entrance to Narvik Bay is about 3,277 ft wide, and the depth at least 14 fathoms. Ofotenfiord is wide and clear. There are lighthouses at Baröen, near the entrance to Ofotenfiord (S. side), also at Tjelodden and Liland—in the fiord, and at Framnes, on the E. side of the entrance to Narvik Bay. The depth of water in the harbour averages 12 to 15 fathoms, with good anchorage everywhere on soft clay, well sheltered, and free from ice all the winter.

The State Railway have a quay at Fagunaes 500 ft. long, which can be reached at high tide by vessels drawing 26 ft., and at low tide by vessels drawing 20 ft. There is a crane to lift 20 to 25 tons. The Luossavaara-Kirunavaara Co. have two quays for discharging coal and loading ore. The coal quay has 20 ft. alongside and is provided with an electric lift. There is a new permanent ore quay, built of granite on the arch system, founded on a solid rock bottom, about 1,100 ft. in length and 40 ft. high from the low water level. Ore trains run on the top and empty their contents through iron shoots into the hatches of vessels, or into pockets holding thousands of tons, from which a vessel can be loaded in a couple of hours. There is 27 ft. alongside this quay at low water ordinary spring tides. The shoots and other appliances are worked by electricity. Two ore steamers of any size may load alongside at the same time, and four or more vessels can be loaded and sent to sea on the same day. Provisions of all kinds, bonded stores, and good water can always be obtained at a moderate price. There is a mechanical shop for repairs.

Pilotage.—There are pilot stations at Tranö and Skraaven. Sea pilotage is compulsory, inward from Tranö to Narvik (44 miles distance money to pay), outward from Narvik only 4 miles compulsory, but Government pilots are obtainable if required to Tranö. Vessels usually engage a private pilot, which is cheaper. Pilot rates are compiled from tonnage and draught, 25 per cent. higher in winter than in summer. **Harbour Pilotage** is not compulsory; 8, 10, or 12 kr., according to the size of the vessel.

Port Charges.—**Light Dues** :—80 ore per reg. ton on vessels with inward cargo; 50 ore per reg. ton on vessels with outward cargo. No light dues on iron ore cargoes. **Wharfage** :—Use of the railway quay and Mining Co.'s coal quay: 1 ore per reg. ton per day (no charge for Sundays and holidays unless working). **Mooring and Unmooring** :—15 kr. for one boat with three men. **Tonnage Dues** :—4 ore per reg. ton, both in and out, if in cargo. **Stevedore** :—*Discharging coal* :—10d. per ton; rate 500 to 800 tons per 24 hours. *Trimming ore cargoes* :—50 to 100 kr. per boat, according to size and agreement. **Labour** :—5 kr. per day. Luossavaara-Kirunavaara Co.'s fixed charge for mooring boat, trimming, and use of tugboat, all inclusive :—5 ore per ton up to 3,000 tons cargo, but not less than 100 kr.; 4 ore per ton from 3,000 to 5,000 tons cargo, but not less than 150 kr.; 3 ore per ton over 5,000 tons cargo, but not less than 200 kr.

Norway—Narvik (*continued*).**Pro Forma Charges** on a steamer of 1,546 reg. tons at Narvik :—

	Arr. with 3,356 tons coal.	Arr. in ballast, out 3,670 tons of ore.
	Kr. ore.	Kr. ore.
Pilotage inwards	153 78	108 10
" outwards	63 36	63 36
Harbour pilot	20 00	10 00
Light dues	1,236 80	—
Custom House officer, overtime	76 80	—
Clearing overtime	4 00	4 00
Harbour dues, inward	61 84	—
" outwards	61 84	61 84
Harbour master's fee	6 00	6 00
Boat assistance in and out	30 00	15 00
Trimming ore cargo	90 00	90 00
Wharfage at coal quay	85 03	—
Stevedore, discharging coal	2,517 00	—
Fresh water, 12 tons	12 00	12 00
Telegrams, postage, and petties	20 00	15 00
Reporting and clearing at Customs	100 00	50 00
	4,538 45 =	435 30 =
	£252 2s. 9d.	£24 3s. 8d.

NØERSNESS.

Nøersness is a small place about 12 miles S. of Christiania, on the W. side of the fiord. It is in what is called the "Roken" district. Roken is an inland town (lat. 59°45' N., long. 10°23' E.), but the name is put on the bills of lading.

Export.—Ice.

Accommodation.—Vessels have to clear at Dröbak. There are two other places in the fiord where vessels load ice, viz. :—Blackstran and Nasodden. Nøersness and Nasodden are well sheltered, good harbours, with plenty of water for the largest ships. At the other ice-loading ports the anchorages are exposed to northerly winds. Vessels loading ice are free of Customs dues.

PORSGRUND.

Porsgrund, in lat. 59°8' N., long. 9°39' E., is about 3 miles from Langesund and the sea, and 2 miles from Brevig.

Population.—About 5,000.

Imports.—Coal, china, clay, barley, and merchandise.

Exports.—Timber, pulp, ice, copper ore, yeast, emery wheels, grindstones, and porcelain.

Accommodation.—Porsgrund river commences at Thorsberg, where there is a revolving red and white light. At this point there is 19 to 20 ft. of water, and vessels of greater draught must complete their discharging or loading at Thorsberg. The channel is here marked by white posts and red buoys, between which ships must pass. From Thorsberg to the bridge (which is passed free of charge to vessels) the navigation is easy. The bridge has an opening of 100 ft., and is well lighted. Vessels wishing to pass must in due time give one long and two short whistles. Steamers must not use the siren; a fine is imposed for doing so. Between the bridge and Molhaugen the navigation is difficult, owing to a reef of rocks and strong current and should never be navigated without a licensed local pilot. The

Norway—Porsgrund (continued).

passage is on the north side of three red posts, standing across the river ; on the south side of these posts there is a lighthouse showing a revolving green light. Off Molhaugen is a rock called Rüsebasen, on which there is 19 ft. of water. Vessels of a draught of not more than $18\frac{1}{2}$ ft. can now enter the harbour, but in about two years' time the depth of water in the harbour will be increased to 22 ft.

The Custom House district commences where that of Brevig ends in Frier Fiord, and extends to and includes Kiorboek on the E., and Menstad on the W. side of the Porsgrund river. Leaving the Brevig boundary, and proceeding up Frier Fiord, are **Saltboden** and **Versvig**, ice-loading places, on the E. ; **Traag** and **Herre** on the W. (at which latter place are pulp works) ; also **Vold**, at the extreme end of Volds Fiord, where both ice and timber are exported. In Volds Fiord are also **Skjellebæk** and **Rôra** ice-houses. Between Thorsberg and the before-mentioned bridge are situated the Custom House, three of the principal sawmills, some ice-houses, iron-works where steamers can repair, the china works, also an emery-wheel factory. Above the bridge is a yeast factory, which imports cargoes of barley ; some timber-loading wharves ; also Borgestad sawmill and tile works.

Port Charges.—Harbour Dues :—5 ore per reg. ton in, and the same out. **Light Dues :—**Vessels with cargo, 80 ore per reg. ton in, and the same out. **Discharging :—**Coal, 50 ore per ton. **Loading :—**Wood-pulp, 50 ore per ton ; timber, 2 kr. 25 ore per std. ; iron ore, 50 ore per ton ; ice, 50 ore per ton. There are no quay dues ; vessels usually discharge and load in the river.

Pro Forma Charges on a steamer of 700 reg. tons, 1,500 tons d.w., drawing $18\frac{1}{2}$ ft., with cargo in and out :—

	Kr.	ore.
Pilot from sea to Porsgrund	45	00
Discharging coal, 50 ore per ton	750	00
Light dues, in, 80 ore per reg. ton	560	00
Harbour dues, in, 5 ore ; and out, 5 ore per reg. ton	70	00
Loading wood pulp, 50 ore per ton	750	00
Light dues, if cargo out	560	00
Pilot out to sea	45	00
Clearance at Custom House	50	00
	2,830	00 = £157 4s. 6d.

REGEFIORD.

Regefiord, or Rekefiord, is in lat. $58^{\circ}20'$ N., long. $6^{\circ}13'$ W.

Export.—Iron ore.

Accommodation.—The harbour is a natural one, and has a narrow entrance ; once inside, vessels are secure from all winds, and it is often used as a harbour of refuge.

There are no port dues. Tonnage, pilotage, and light dues are the same as other ports in Norway.

RISÖR, OR OSTERRISÖR.

Risör is in lat. $58^{\circ}42'$ N., long. $9^{\circ}13'$ E.

Population.—4,200.

Import.—Coal.

Norway—Risör, or Osterrisör (*continued*).

Exports.—Timber, sawn-wood, wood-pulp, feldspar, and ice.

Accommodation.—The harbour is safe and well sheltered, and can be entered at all times by the largest vessels. It is a good refuge for vessels windbound. The depth of water on the anchorage ground is from 10 to 15 fathoms, and in the inner harbour 12 to 36 ft. There is 900 ft. of quayage with 8 to 9 ft. of water alongside in the inner harbour, and 600 ft. in the outer harbour, with 12 or 13 ft. alongside. There are good facilities for repairing wooden vessels, and ample stores can be obtained. Steamers between Christiania and Christiansand, or Bergen, and vice versa, call daily in summer and winter.

Pilotage.—According to tonnage and draught. For a vessel of 500 to 550 reg. tons, drawing about 15 ft. : Winter, 60 kr. 50 ore inwards ; 32 kr. 50 ore outwards ; summer, 47 kr. 80 ore inwards ; 25 kr. 80 ore outwards. Mooring ring, 4 kr.

Port Charges.—Harbour Dues :—8 ore per reg. ton. **Custom House Dues :**—Outgoing vessels with cargo, 50 ore per reg. ton. **Towage :**—Cheap, according to agreement. **Harbour Master's Fee :**—For vessels of 420 reg. tons and upwards, 4 kr. **Stevedore :**—Loading sailing vessels, 3 kr. to 3 kr. 50 ore per day ; steamers, props, 1 kr. 80 ore per std. ; deals, 2 kr. per std. ; planed yellow boards, 3 kr. per std. ; wet wood-pulp, 56 ore per ton ; dry wood-pulp, 66 ore per ton. **Provisions :**—Fresh beef about 45 ore per lb.

Pro Forma Charges on a vessel of 500 to 550 reg. tons, ballast in and cargo of block ice out, drawing about 14 ft. :—

	Kr.	ore.
Pilot from sea in summer	44	50
Towage	40	00
Assistance with mooring	5	00
Mooring ring	4	00
Harbour master	4	00
Reporting and clearing	25	00
Pilot out	24	90
Towage out (dearer with ice than with wood, as loading places are more distant).	40	00

187 40 = £10 8s. 2d.

SANDEFIORD.

Sandefiord, in lat. 59°8' N., long. 10°12' E., lies between Tonsberg and Larvik.

Population.—About 5,000.

Import.—Coal.

Export.—Wood.

Accommodation.—Vessels anchor in the bight abreast of the town, in from 19 to 60 ft., on a clay bottom. The harbour is large and well sheltered. There are two piers, one 100 and the other 300 ft. long ; depth alongside, 18 ft. The quayage measures 620 ft., and has 15 ft. alongside at high water and 12 ft. at low. There is a floating dry dock, 260 ft. long, with a carrying capacity of 1,300 tons. There is also a shipbuilding yard here, mechanical works, and patent slips for small boats. There is a crane to lift 4 tons. Ballast can be discharged on the W. side of the harbour, 2 miles from the town.

Norway—Sandefjord (*continued*).

Pilotage.—10 to 200 kr., according to the size of the vessel.

Port Charges.—**Towage** :—As per agreement. **Light and Tonnage Dues** :—See **Norway**. **Port Dues** :—4 ore per reg. ton if the vessel comes alongside the pier. **Shipbroker** :—10 to 20 kr. **Stevedore** :—Loading timber, 2 kr. per standard ; discharging coal, 50 ore per ton. Provisions cheap. Expenses on a steamer or sailing vessel of 300 reg. tons, with cargo in and out, about 1,000 kr.=£55 11s. 2d.

SANDNAES.

Sandnaes is in lat. 58°52' N., long. 5°43' E.

Population.—2,500.

Imports.—Coal, timber, and manure.

Exports.—Agricultural products, bricks, stone ware, and manufactured goods.

Accommodation.—The depth of water alongside the quays is from 14 to 16 ft. The tides have very little effect.

Pilotage.—Compulsory for vessels coming from foreign ports.

Port Charges.—**Tonnage Dues** :—Vessels coming from and going to foreign ports, 6 ore per reg. ton ; vessels from and to Norwegian ports, 3 ore per reg. ton. **Light Dues** :—See **Norway**. **Ballast** :—As per arrangement. **Labour** :—Same as at Stavanger. **Brokerage** :—As per agreement. **Quay Dues** :—3 ore per ton per day, if with coal 1½ ore per ton per day.

SARPSBORG.

Sarpsborg, in lat. 59°17' N., long. 11°7' E., is situated on the river Glommen, about 6 miles above Fredriksstad.

Population.—7,000.

Imports.—Coal, coke, salt, grain, firebricks, china clay, limestone, raw zinc, zinc ore, pyrites, etc.

Exports.—Paper, pulp, carbide of calcium, ferro silicium, condensed milk, refined zinc, lead, granite residues, deals, battens, floorings, etc.

Accommodation.—There is 2,480 ft. of public quayage, with a depth alongside of from 10 to 18 ft., and 2,017 ft. of private quayage with from 12 to 20 ft. alongside. Vessels of 23 ft. draught can at any time ascend as far up in the harbour as Hannestad. During May and June the current is at times so strong that, unless there is a good breeze, sailing vessels are obliged to employ a steam-tug. The depth of the entrance to Sarpsborg is 20 ft.

Pilotage.—Pilots will always be found off the Føerder lighthouse, and a steam-tug can be had in the Glommen.

All expenses same as at Fredriksstad.

SKIEN.

Skien, in lat. 59°14' N., long. 9°34' E., is an important port situated one mile from Porsgrund, and 5 miles from the sea.

Population.—About 11,400.

Imports.—Coal, corn, and general merchandise.

Norway—Skien (*continued*).

Exports.—Pulp, paper, timber, carbide, nitrate, etc.

Accommodation.—The Skien Custom House district commences at Kjørboek on the W., and Böhle on the E. side of the river. There are rocks here on which there is a depth of from 12 to 15 ft. of water, marked by posts, the navigation being on the W. side of the same. A little further up on the E. side, is Ekornrod rock, 2 to 4 ft., marked by a post, and beyond that, a little further up, Graaten, where there is 18 ft. The current here and up to Skien is sometimes so strong that the passage cannot be buoyed, and as this is a very intricate passage, local licensed pilots should invariably be employed. Proceeding past Graaten, the harbours of Follestad and Sandviken are reached. These harbours are deep and convenient, and the larger vessels and steamers load and discharge here. There is good anchorage in 4 to 6 fathoms of water. Passing the Custom House the inner harbour is entered, where ships drawing 15 to 16 ft. can lay alongside the quays, which are 2,500 ft. long. The steamer traffic to and from Skien is very considerable, it being a great centre of pulp and paper manufactories, besides timber trade. There is also a large flour mill, where discharging is done by electricity; carbide and nitrate factories, besides sundry other industries creating import and export traffic. Very good dispatch is given to steamers. Provisions are plentiful at moderate charges. Railway communication with Christiania. Steamer service E. and W. daily.

The Harbour Board of Skien and Porsgrund have developed plans for considerably deepening and widening the river in several places, which, when effected, will render Skien accessible for much larger vessels than can now navigate there.

Port Charges.—**Custom House Dues and Light Dues** :—80 ore per reg. ton inwards, 50 ore per reg. ton outwards. **Labourers** :—3 kr. to 3 kr. 50 ore per day.

Pro Forma Charges on a steamer of 1,500 tons d.w., entering with a cargo of coal in, and wood-pulp out :—

	Kr.	ore.
Inwards with coal—		
Pilotage from sea to Porsgrund	87	90
Pilotage from Porsgrund to Skien	14	80
Custom House dues and light dues, 80 ore per reg. ton, plus 1 per cent. (free if in ballast)	698	40
Discharging 1,500 tons coal at 47 ore per ton	705	00
Custom House watch from Langesund	8	00
Brokers' clearance fee	40	00
	1,554	10 = £86 6s. 9d.
Outwards with wood-pulp—		
Loading 1,500 tons wood-pulp at 50 ore per ton	750	00
Custom House dues and light dues at 50 ore per reg. ton, plus 1 per cent. (free if in ballast)	465	60
Pilotage from Skien to sea	57	30
Harbour master	4	00
Mooring dues	8	00
Brokers' clearance fee	40	00
	1,324	90 = £73 12s. 1d.
		£159 18s. 10d.

SOON.

Soon, in lat. 59°31' N., long. 10°43' E., is about 5 miles N. of Moss.

Population.—750.

Norway—Soon (continued).

Exports.—Timber, deals, boards, and pit-props.

Accommodation.—The harbour is safe and well protected, with good anchorage ground, in 7 to 12 fathoms of water, close to the town.

Expenses are the same as at Moss.

STAVANGER.

Stavanger is in lat. 58°58' N., long. 4°40' E.

Population.—32,500.

Imports.—Grain, provisions, timber, coal, iron, metals, salt, and general goods.

Exports.—Herrings, fish, anchovies, eggs, butter, cheese, conserves, etc.

Accommodation.—The harbour is good, and can receive the largest vessels. There is a depth of from 7 to 19 fathoms, with excellent anchorage. There is nearly 4,000 ft. of quayage, with from 6 to 24 ft. alongside; and 1,000 ft. of piers, with from 3 to 12 ft. alongside. Tides rise only 3 ft. All kinds of repairs can be executed both to steamers and sailing vessels. Shipbuilding in both wood and iron is carried on. There are two large graving docks—one 282 ft. of available docking length, 43 ft. wide at the entrance, 12 ft. on the sill, and 12 ft. on the blocks; the other, 220 ft. long, 44 ft. wide at the entrance, 13 ft. on the sill, and 13 ft. on the blocks. There are also two repairing slips—one can take vessels 160 ft. in length, and 600 tons d.w., the other vessels 120 ft. in length. There is a crane to lift 15 tons; one to lift 3 tons; and nine to lift 1 ton each. A stock of coal is always on hand.

Pilotage.—See **Norway**. Harbour pilotage, 3 to 12 kr.

Port Charges.—Tonnage Dues:—See **Norway**. **Town Dues:**—6 ore per ton of goods from or to a foreign port; 3 ore per ton of goods from or to Norwegian ports, not exceeding the net reg. tonnage of the vessel.

Exchange Dues:—Under 2,000 reg. tons, 1 ore per reg. ton; over 2,000 reg. tons, 1½ ore per reg. ton. **Ring Dues:**—From 40 ore to 4 kr. **Quay Dues:**—

2¼ ore per gross reg. ton for 24 hours. **Towage:**—According to agreement—

from sea to harbour, for a vessel of 500 reg. tons, about 60 kr.; harbour towage, 5 to 25 kr. For a vessel of 1,000 reg. tons, 120 kr.; harbour,

25 kr. **Harbour Dues:**—2 to 8 kr. **Labourage:**—4 kr. per day. **Stone**

Ballast:—1 kr. 50 ore per ton. **Water:**—2 kr. per ton, brought to the ship's

side. **Stevedore:**—Stowing herring barrels, about 4 kr. per 100; discharging salt, 4½ kr. per 100 barrels of 140 litres; grain, 55 ore per ton. **Broker-**

age:—2½ to 5 per cent. **Provisions:**—Beef, 40 to 50 ore per lb.

Pro Forma Charges on a steamer of 1,855 reg. tons, with a cargo of 4,000 tons of grain in, and ballast out, drawing 20 ft. loaded:—

	Kr.	ore.
Harbour dues at 80 ore per reg. ton, and town dues at 6 ore per reg. ton	1,595	30
Brokerage	100	00
Pilotage, in and out	201	19
Discharging 4,000 tons of grain at 50 ore	2,000	00
Boat hire, 16 kr.; survey hatches, 16 kr.; harbour pilot, 20 kr.	52	00
Hire of discharging barrels and shoots	250	00
Ring dues, 8 kr.; tallymen, 44 kr. 50 ore	52	50

4,250 99 = £236 3s. 4d.

Norway.**TONSBERG.**

Tonsberg, in lat. 59°16' N., long. 10°25' E., is situated off the Christiania Fiord.

Population.—9,100.

Imports.—Coal, salt, iron, grain, hemp, ship's stores, etc.

Exports.—Wood, timber, seal and whale oil, whalebones, guano, etc.

Accommodation.—The harbour can be entered by vessels drawing 21 ft. from the E. side, through the channel called Sten, and from the W. side vessels drawing 23 ft. can enter. The depth in the harbour is about 30 ft.; alongside the quays, which are 2,000 ft. long, the depth is from 16 to 19 ft.

The whale and seal fishery is very extensively carried on here. Tonsberg is the best and cheapest place in this part of the country for repairing ships and furnishing stores, etc.

Pilotage.—Compulsory. For a vessel of 350 reg. tons, 67 kr. 90 ore in, and 40 kr. 40 ore out. Pilots are always to be had.

Port Charges.—**Towage** :—For a vessel of 350 tons reg., 60 kr. in and out, or per agreement. **Loading** :—About 1 kr. 60 ore per St. Petersburg standard. **Harbour Dues** :—50 ore per reg. ton on cargo in or out.

Discharging :—Coal, 35 to 45 ore per ton; iron, 40 to 60 ore per ton. **Ballast** :—1 kr. to 2 kr. per ton f.o.b. **Clearance** :—£3. **Carpenter's Wages** :—

3 kr. 50 ore per day. **Commission** on collecting freight, $\frac{1}{4}$ per cent.

TOU.

Tou is in the Customs' district of Stavanger, which is in lat. 58°58' N. long. 4°40' E.

Import.—Grain.

Accommodation.—This harbour, which has been recently opened, is an excellent one, providing accommodation for the largest vessels in from 7 to 9 fathoms. Quays have been constructed with a depth of 6 ft. to 14 ft. alongside. On these quays grain elevators and storehouses have been constructed, thus ensuring quick despatch.

Pilotage.—See **Norway**.

Port Charges.—These are the same as at Stavanger, which see.

TROMSÖ.

Tromsö, is in lat. 69°40' N., long. 19°0' E.

Population.—7,000.

Imports.—Corn, colonial produce, coal, salt, iron, cement, etc.

Exports.—Cod oil, seal oil, salted and dried fish, herrings, and hides.

Accommodation.—The inner harbour has 26 ft. of water at high tide and 16 ft. at low; the north harbour has 30 ft. at high tide and 23 ft. at low; the outer anchorage has from 5 to 8 fathoms; all three being good and safe. Loading and discharging is easily carried on by means of lighters. In the north harbour there are private quays where vessels can discharge coal direct. A new mole has been completed at the south of the harbour and affords good

Norway—Tromsö (continued).

protection. The rise of the tide at springs is about 8 ft. There are nine patent slips, one to lift 500 tons, one 250 tons, two 200 tons, two 150 tons, two 100 tons, and one 50 tons. There are very few mechanical workshops, and ship-building is almost confined to repairing vessels that frequent the port.

Ships' provisions are cheap. 5,000 to 10,000 tons of coal are kept in stock.

Captains are compelled to have all their papers ready before being boarded by the Custom House officers. For not having such a list ready when coming from sea, the captain is liable to a fine of 20 kr.

Pilotage.—The pilot stations for vessels bound for Tromsö are at Andenos and Hekkingen lighthouses; also a station for Custom House officers. Vessels can go inside Lofoten Islands, Westfiord, and take a pilot at Lodingen.

Port Charges.—**Harbour Master Dues** :—4 to 8 kr. for each vessel. **Mooring** :—4 kr. **Harbour Dues** :—6 ore per reg. ton. **Tonnage and Light Dues** :—See Norway. **Sand Ballast** :—About 1 kr. per ton; stone ballast, very scarce, 2 kr. per ton. **Brokerage** :—Commission on chartering, $2\frac{1}{2}$ to 5 per cent. on the amount of freight. Clearing charges, including interpreting, from 50 to 100 kr., according to the size of the vessel. Collecting freight, $\frac{1}{2}$ per cent.

TRONDHJEM.

(See Drontheim, p. 394.)

TVEDESTRAND.

Tvedestrand is in lat. $58^{\circ}37' N.$, long. $8^{\circ}54' E.$ The town is situated at the head of a fiord about 5 miles in length.

Population.—1,800.

Imports.—Coal, coke, and iron.

Exports.—Timber, deals, battens, boards, wood-pulp, and ice.

Accommodation.—There is sufficient water for vessels of any size, and the harbour is sheltered from every wind. There is 2,100 ft. of quayage, with 38 ft. of water at high tide, and 28 ft. at low, alongside.

Vessels windbound generally anchor in one of the outer harbours: inside of Sando Island, in 10 fathoms; Sandvigen, in 10 to 12 fathoms; and Kilsund, in 8 to 10 fathoms. These three places afford very good anchorage, and are well sheltered. Sandvigen has a telegraph station. Nasbugt, inside Borden, where there is 10 to 15 fathoms, affords the best anchorage for large vessels, being commodious and easy of access.

Shipbuilding is carried on; vessels in need of repairs can have them done at a moderate price.

Vessels from a foreign port must deliver a manifest of cargo on board, and a list of provisions, to the Customs officer. Cooking is now allowed on board.

Pilotage.—Compulsory.

Port Charges.—**Quay Dues** :— $1\frac{1}{2}$ ore per reg. ton per day. **Labourage** :—2 kr. 50 ore to 3 kr. per day. **Ballast** is discharged overboard; it costs about 40 ore per ton. **Provisions** :—Moderate. Beef 30 to 35 ore per lb. **Water and Fuel** :—Plentiful and cheap.

Norway—Tvedestrand (*continued*).

Pro Forma Charges on a steamer of 673 reg. tons, arriving in ballast, and loading 373 standards, outwards :—

	Kr.	ore.
Custom House charges	337	50
Stevedore	647	02
Pilotage, inwards	56	30
Pilotage, outwards	34	86
Ring dues	8	00
Clearance, in and out	100	00
Telegrams, telephone, and postage	15	80
Half measuring fees	97	80
	1,297	28 = £72 1s. 5d.

VADSO.

Vadso, in lat. 70°7' N., long. 29°50' E., stands on the N. shore of Varanger Fiord.

Population.—2,000.

Imports.—Salt, coal, colonial ware, etc.

Exports.—Cod-fish, fish oil, and fish manure.

Accommodation.—The depth of water in the bay or haven is from 8 to 19 ft. About half a mile from the town there is 18 ft. of water. The harbour, sheltered by a stone pier, is 500 ft. long, 300 ft. wide, 100 ft. wide at the entrance, 26 ft. deep at the entrance at high tide, and 16 ft. at low ordinary springs. Coal and other goods are shipped in lighters.

Pilotage.—Not compulsory ; when a pilot is employed charges are according to the draught of a vessel.

Port Charges.—Tonnage and Light Dues :—See Norway.

Ballast :—1s. 6d. per ton.

VARDÖ.

Vardö is in lat. 70°22' N., long. 31°8' E.

Population.—About 2,500.

Accommodation.—The roadstead between the mainland and Vardö is good, with about 80 ft. at low water, and is sheltered from all but S.S.W., S., and S.S.E. winds. The harbour is 206 ft. wide at the entrance, 60 ft. deep at the entrance, 45 ft. deep in the middle of the harbour at low water, but shallow at the head. There are no loading quays ; vessels discharge and load by lighters. There is a crane to lift 3 tons. The Government pier has a depth of 20 ft. at high, and 14 ft. at low water. A large supply of coal is kept. Temporary repairs can be effected in cases of emergency.

PORTUGAL

AND THE AZORES.

Portugal is a small kingdom occupying the western half of the Iberian Peninsula. Including the Azores and Madeira, which for administrative purposes are regarded as an integral part of the kingdom, it has an area of 35,490 square miles, and a population of about $5\frac{1}{2}$ millions.

Commerce.—The total trade of the country is of an annual value of about £18,000,000, of which amount the imports represent £12,000,000, and exports £6,000,000. Customs duties are imposed on all goods under the provision of the law of July, 1902. One clause of this law which shippers should specially note is that which provides that the duty of 50 reis on pharmaceutical specialities and foreign medicinal mineral matters shall be charged only at Lisbon, Oporto, and adjacent islands, where the goods must be entered. The chief ports are Lisbon, Setubal, and Oporto, at which last named port there is a vigorous colony of British merchants engaged in the port wine trade.

Mercantile Marine.—The commercial fleet of Portugal has a total tonnage of 116,065 tons, made up of 62,423 tons steam, and 53,642 tons sail.

Internal Communications.—The rivers of Portugal are navigable for small craft to the Spanish frontier. There are 1,675 miles of railway open, of which 580 miles belong to the State. The roads between the chief towns are kept in fairly good condition. A post and telegraph system has been established throughout the country.

Currency, Weights and Measures.—The unit of account is the real (plural reis), value $\frac{1}{4}d.$, and in recording payments and receipts no other denomination of money besides reis is used. The smallest coin in use is the 5 reis piece. The par value of the Portuguese currency is as follows :—

	£	s.	d.
100 reis	=	0	0 $5\frac{1}{2}$
1,000 reis or 1 milreis	=	0	4 $5\frac{3}{4}$
4,500 reis	=	1	0 0
1 conto of reis (1,000 milreis)	=	224	4 $5\frac{1}{2}$

The rate of exchange varies considerably ; for the three months ended May 31, 1908, the average was 5,080 reis = £1 sterling.

The metric system of weights and measures is the legal standard, but the old measures are still in use in many parts. The chief of these are as follows :—

The libra	=	1.012 lb. avoirdupois.
„ almude { of Lisbon	=	3.7 imperial gallons.
{ of Oporto	=	5.6 imperial gallons.
„ alquiere	=	0.36 imperial bushels.
„ moio	=	2.78 imperial quarters.

Tonnage measurement : 88.290 tons register = (approximately) 100 cubic metres. To arrive at Portuguese cubic metres, multiply English net tonnage by 40 and divide by 35.26.

Portugal.

General Regulations.—Bills of Health.—Vessels bound to Portugal must obtain a bill of health from the Portuguese Consular Colonial Authority of the port they originally depart from, and visés at ports where they may touch; such bills of health and visés are not valid if obtained more than twenty-four hours before the vessel's sailing. The master must, on arrival, give detailed information to the health-officer as to movements and sanitary state of the vessel, sickness or deaths on board, etc., and obey all the directions of the health-officers.

Steam-packets, carrying a surgeon, will receive the health visit before any other vessels, except those of the State and foreign ships of war.

Vessels bringing a clean bill of health from a clean port will be admitted to free pratique unless there has been cholera, yellow fever, or plague at her port of departure within a certain number of days after her sailing, or "suspicious" illness on board during the voyage.

It must be remembered, however, that a Government quarantine notice may, and very frequently does, ante-date the time at which a port becomes "suspected" or "infected"; so that a ship, for example, sailing from Sicily on April 1, with a clean bill of health from a port up to that time officially considered clean, may find on arrival in Lisbon on April 20 that a quarantine notice, issued on April 10, has declared Sicilian ports suspected of cholera from March 25, and she will have to perform quarantine in consequence. Shipmasters must understand that there is no remedy so far as this regulation is concerned, such being the law for natives and foreigners alike.

Quarantine is of three descriptions: Complimentary, of observation, and rigorous. Foul bills of health, and "infected" ports of departure, of course, involve rigorous quarantine; while "quarantine of observation" is applicable to vessels coming with clean bills of health from "suspected" ports. The exceptions to this latter rule are, however, so many, and the whole system so complicated, that it is impossible to give a clear account of it within the limited space at our disposal; a circumstance which is of the less consequence, that, according to law, the Portuguese Government has an absolute discretion in all matters connected with the public health, and in times of epidemic (as in 1884) it entirely supersedes all the ordinary quarantine regulations. The system is undoubtedly most vexatious, and affects shipping and trade very prejudicially.

A vessel arriving with cases of yellow fever, plague, or cholera, and when deaths from those diseases have taken place during the voyage, will be put into rigorous quarantine. The passengers have to go to the lazaretto, where they remain seven days. Any cargo landed must be sent to the lazaretto likewise.

A vessel arriving with a foul bill of health will be put into quarantine—the passengers for Lisbon and those in transit may land, but their luggage must be sent to the lazaretto, where their soiled linen is disinfected by a special process which does not damage them. Any cargo landed must be sent to the lazaretto likewise.

Where the quarantine is of observation only, the cargo need not be discharged into the lazarettoes; but if rigorous, the whole of the "susceptible" cargo, luggage, and effects must be landed there.

The following goods are considered susceptible: Cottons, hair and hemp, raw or manufactured; closed letters, papers and newspapers; hides, fresh

Portugal.

dried, and tanned ; horse-hair, portions of animals, unpreserved wool, flax, raw or manufactured skins, feathers, silk, vegetable horse-hair (sumahuma), pressed hay, etc.

Manifests.—Bales of merchandise must be described in the ship's manifest, with all the requirements contained in the regulations forming part of the Portuguese consular code ; and further requiring that every package shall show its respective weight, the gross weight only of all packages bearing the same mark being entered upon the manifest.

Navigation Treaty Reciprocal.—British vessels are treated on the same footing as Portuguese, and vice versa. This privilege extends to the colonies of each nation. By a law which bears the date April 16, 1885, the coasting trade between the Portuguese colonies to the east of the Cape of Good Hope, viz., Mozambique, Portuguese India, Macao, and Timor and the ports of Portugal on the Continent of Europe, and in the adjacent islands, viz., Madeira, the Azores, etc., is thrown open to foreign shipping of all nationalities ; but the coasting trade of continental Portugal and the adjacent islands, whether as between their own ports or those ports and the Portuguese ports of West Africa, remains, as heretofore, reserved to the national flag.

Passports.—Masters of ships who admit passengers or emigrants on board without passports from the proper authority, or omit to present the list of passengers on receiving the visit of clearance, are liable to a fine of 400 dols.

Ballast.—A royal order imposes a fine equal to the amount of port charges upon masters of vessels arriving in ballast from ports where there is a Portuguese consul, or Vice-consul, and neglecting to present a certificate of the quality and quantity of the ballast on board their vessels.

All vessels arriving in ballast must bring a certificate from the Portuguese Consul at the port of loading stating port of destination ; but if the vessel puts in to Lisbon in consequence of stress of weather, then the authorities will accept a declaration made by the master.

Tonnage Dues.—These are levied in accordance with the law of September 20, 1890, by which the tonnage, anchorage, sanitary, and quarantine dues up to then in force were abolished in Portuguese ports and a “ *Direitos de Cargä* ” substituted as follows :—

Coal, coke, or sulphur, per ton of 1,000 kilos. discharged, 100 reis,
On all other merchandise, per ton of 1,000 kilos. discharged, 250 reis,

the minimum charge being fixed at 5,000 reis for each vessel discharging cargo. Vessels entering in ballast, or only to load cargo, pay 5,000 reis regardless of the quantity received. If, however, the vessel has brought an inward cargo and paid dues to the amount of, or in excess of, 5,000 reis, then no charge is made.

For every passenger disembarked 300 reis is charged, and for every passenger shipped 1,000 reis. Children under 12 years of age are exempted, as well as passengers from or for Portuguese colonial possessions. (An additional 20 per cent. on the foregoing dues is levied on vessels frequenting Oporto, which sum is specially applied to improving the bar of that harbour.) Vessels calling for bunker coals or other necessary supplies, as well as those which may put in with damage and have to discharge their cargoes to effect

Portugal.

repairs, etc., are exempt from the payment of the dues. The weight of cargoes of timber is calculated at 700 kilos. to each cubic metre. Vessels from any infected or suspected ports pay 25 per cent. above these dues, in addition to the quarantine tax, which, however, is not to exceed 15,000 reis (£3 6s. 8d.) for sailing vessels, and 25,000 reis (£5 11s. 1d.) for steamers.

As there appears to be a misunderstanding on the part of many ship owners concerning these tonnage dues, it should be explained that an attempt having been made to recover these from shippers or receivers of cargo, the latter approached the Government upon the subject. The result was that the Government on May 19, 1891, published a decree explaining, and laying down positively, that any attempt to exact these dues from the receivers of cargo was illegal, as they were leviable on, and payable exclusively by, the ships or steamers bringing the cargo, and that any clause to the contrary that might be inserted in bills of lading, charter parties, or other agreements would be considered null and void.

Customs Regulations and Consular Charges.—The law of July 13, 1899, made important changes in the consular charges in connection with shipping. By this Act consular manifests were done away with altogether. Every ship or steamer bringing cargo for Portuguese ports has simply to hand up to the Customs officer that boards the vessel directly she anchors two manifests, with a copy of each bill of lading attached to one of the manifests, of the cargo intended for the port.

The manifest, as usual, must give the number of bill of lading, names of shippers and receivers (or to order), marks, numbers, and description of packages, contents, value, and gross weight; also a summarized manifest of the cargo there may be on board in transit for other ports.

The only consular document that is compulsory to be presented is a Portuguese consular bill of health, or a visé to be obtained at the port of departure.

The charge or fee for this is 9,000 reis if the value of the cargo for the port is more than 180,000 reis. If the value of the cargo does not reach that amount, or the vessel has no cargo for the port, or if she is in ballast, then the consular fee for the bill of health is 4,500 reis.

If there is no Portuguese Consul or Vice-consul at the port of departure, or where the steamer received orders to proceed to a Portuguese port, the captain or his agent should obtain a bill of health from the Consul of any friendly nation, say English, French, etc., and if there is no Consul or Vice-consul, then he should obtain a bill of health from the local authority.

The ship does not require to present any other consular documents, unless she has *tobacco* on board, either for the port, or in transit for some other port. In this case the captain must obtain from the Consul, or Vice-consul, at the port he received it, a certificate giving a full description of the packages, marks, numbers, weight, and value, and present it on his arrival at the Portuguese port. The fee for this certificate is 2,000 reis.

Emigration.—No regulations governing the shipment of emigrants from Portugal are ever enforced, as there are no regular emigrant ships, the traffic, such as it is, being carried out by first-rate British, German, and French shipping firms whose arrangements have never given rise to complaint. There are also no regulations prohibiting the immigration of any persons whatever.

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ALBUFEIRA.

Albufeira is in lat. $37^{\circ}4' N.$, long. $8^{\circ}14' W.$

Population.—About 4,000.

Accommodation.—There is a small bay, but the port is only suitable for vessels of light draught, although the anchorage is good.

AVEIRO.

Aveiro, in lat. $40^{\circ}40' N.$, long. $8^{\circ}39' W.$, is situated on the river Vouga, about 4 miles from its mouth.

Population.—About 7,500.

Imports.—Coal, coke, iron, etc.

Exports.—Oil, wine, oysters, sardines, oranges, salt, herrings, anchovies, and copper ore.

Accommodation.—The depth of water on the bar is 12 to 13 ft. at high water springs, and 10 ft. at high water neaps; but no vessels drawing more than 11 ft. should charter for this place. The average draught of vessels entering the port is $10\frac{1}{2}$ ft.

The signal for vessels to come in is a red flag hoisted on the castle. Once inside, there is 3 to 4 fathoms water as far as Ovar, about 9 miles up the river.

Pilotage.—When pilots cannot come out, they remain just inside the bar, and direct shipmasters by waving a flag.

Ballast.—About 8*d.* per ton.

Pro Forma Charges on a vessel of 150 cubic metres, cargo in and out :—

	£	s.	d.
Pilotage in, with boat manned by nine men	1	15	6
„ in the river and mooring the vessel	0	14	6
Custom House	7	10	0
Pilotage out, unmooring the vessel and going down to the bar	0	14	6
Pilotage out, with two boats manned by eighteen men	2	14	0
	£13	8	6

FARO.

Faro, in lat. $37^{\circ}2' N.$, long. $7^{\circ}56' W.$, stands at the mouth of the river Valfermoso, about $4\frac{1}{2}$ miles N. of Cape St. Mary.

Population.—11,789.

Exports.—Dry figs, almonds, raisins, and cork wood.

Accommodation.—The captain of the port will not allow pilots to take vessels over the bar drawing more than $12\frac{1}{2}$ ft., but there is about 14 ft. at high water spring tides.

Tonnage Dues.—See Portugal.

Pro Forma Charges on a Swedish vessel bound for Hull, with a full cargo of locust beans :—

Portugal—Faro (*continued*).

	Reis.
Custom House charges, tonnage and sanitary dues	24,105
Pilotage in and out, and river up and down	16,400
Assisting master for clearance on ship's arrival and interpreta- tion, £2 2s.	9,200
Lighters ballast	8,000
Labourers on board	39,600
44 men outside the bar at 800 reis per day	35,200
Boat hire	1,200
Hire of shovels, baskets, etc.	4,300
Water	4,000
10 mats	1,200
Boat to bring pilot on board	500
Boat to take captain ashore from outside of bar	2,500
Postages and telegrams	5,000

151,205 = £29 15s. 3d.

FIGUEIRA.

Figueira, in lat. $40^{\circ}10' N.$, long. $8^{\circ}52' W.$, is situated on the river Mondego, about a third of a mile from its mouth.

Population.—6,000.

Imports.—Cod-fish, coal, iron, sulphur, etc.

Exports.—Wines, salt, oranges, cement, planks, etc.

Accommodation.—No vessel drawing above 11 ft. should charter for this place. There is generally a heavy swell, and, unless at spring tides and with a smooth sea, it is impossible to get in or out. With the wind from S. by W. round to N.N.W., vessels must immediately proceed to sea.

The anchorage is on shifting sand. The tidal harbour has an area of 620 acres and 3,900 ft. of quayage, with a depth alongside at ordinary springs of 12 to 13 ft. at high, and 10 ft. at low water. On the bar there is 12 to 13 ft. at high springs, and 9 to 11 ft. at high neaps.

Figueira from its position between Lisbon and Oporto, is a good signal station to vessels coming to Portugal for orders.

The following signal will be shown to enable masters to know whether the harbour can be taken :—

Red Flag.—Tide flag. No vessel to attempt the harbour when this flag is not hoisted. When the flag is hoisted and then lowered, vessels must keep at a moderate distance till the flag is again hoisted. If a gun is fired at the time the flag is hoisted, vessels will have to make more sail in order to save the tide. But if a gun is fired without colours being hoisted, vessels will proceed to sea at once, and return at a more convenient opportunity.

When flag N. is hoisted it is dangerous to approach, and vessels must clear off at once.

On approaching the bar, great attention should be paid to the fort and pilot's boat: Flag inclined to the south means—Keep your ship more southerly. Flag inclined to the north means—Keep your ship more northerly. Flag upright means—Keep your ship direct on.

Provisions and water are cheap, and of good quality.

No ballast is allowed to be thrown overboard, and when ships have to receive or discharge any ballast they have to do it with all precaution, by placing an old sail or tarpaulin from the ship's side to the lighter.

Pilotage.—Pilots come off from Buarcos, near Cape Mondego.

Any vessel calling in the bay for orders, and requiring the services of a

Portugal—Figueira (continued).

pilot-boat outside, pays 11s. to the crew of the boat ; if the sea is not smooth an extra sum must be paid.

Port Charges.—Labour :—About 2s. per man per day. **Ballast :**—Receiving or discharging, 6d. per ton alongside. **Towage :**—Sea, 140 reis per cubic metre, less 10 per cent. discount on the full amount (minimum 12 milreis). Vessels using tug-rope pay an extra charge of 1,600 reis.

When the tug has been ordered and made ready, and the sea prevents her from crossing the bar, or the master of the ship requiring her refuses her aid, an indemnity of 3,000 reis has to be paid by the ship.

The tug will be made ready at any time after 7 hours' notice.

Pro Forma Charges on a vessel of 100 register tons, with a cargo in and out :—

	£	s.	d.
Buarcos boat for taking pilot on board	0	12	0
Coast pilot, first day	0	6	0
" " following days, per day	0	4	0
Pilotage, in and out, including mooring and unmooring	4	12	0
Custom House and bar dues, including hospital fees and bill of health	10	0	0
Entering, clearing, and brokerage	2	0	0
	<hr/>		
	£17	14	0

LAGOS.

Lagos, in lat. 37°8' N., long. 8°31' W., is about 18 miles E. by N. of Cape St. Vincent.

Population.—About 8,000.

Imports.—Coal, olive oil, and tin plates.

Exports.—Preserved tunnies, sardines, anchovies, wine, and fruits.

Accommodation.—Only small steamers enter the river when forced to do so owing to bad weather ; there is only a depth of 7 ft. at high water. The anchorage in the bay is in 7 to 10 fathoms, about half a mile from the town, and is well sheltered from northerly winds. Fresh water can be obtained free. Fresh provisions are plentiful and cheap. Small repairs can be executed.

LEIXOES.

Leixoes, in lat. 41°10' N., long. 8°43' W., is situated about 3 miles N. of the river Douro, and 5 miles from Oporto.

Imports.—Cotton, grain, hides, etc.

Exports.—Pit-wood, wine, etc.

Accommodation.—There is a depth of 8½ fathoms between the two moles, and there is room for about 12 steamers in the harbour.

There is a Customs dépôt here, and large steamers receive and discharge cargo. All Customs and health visits are made here, but clearance, etc., is made at Oporto. There is no quay or landing stage, and cargo is loaded and discharged by means of small craft and lighters. Vessels are moored with two bower anchors by the pilot. The harbour cannot be considered perfectly safe in the winter months, as vessels have driven foul of each other in swinging. The harbour has a total water area of 230 acres, of which 107 acres has a depth of upwards of 24 ft. at low water springs.

Portugal—Leixoes (*continued*).

Breadth of entrance, 722 ft. ; depth at entrance, at low water springs, about 48 ft. Depth in the centre of the harbour, at low water springs, about 28 ft. ; depth at the centre of the part of the harbour with upwards of 24 ft., at low water springs, about 33 ft. Rise of spring tides, 7 to 12½ ft. ; rise of neap tides, 2¼ to 7½ ft.

The largest vessels can enter the harbour at all tides ; they remain at anchor. The bulk of goods for shipment is taken out from Oporto to the port in substantial lighters. Goods are also brought from Oporto by electric tram.

Quarantine (full) is performed at Lisbon ; quarantine of observation is performed here.

Port Regulations.—Entries and sailings from the port of Leixoes may take place uninterruptedly by day or by night, weather permitting. A vessel desiring to enter at night must approach the entrance, send up a rocket, and wait for the pilot.

Vessels must berth in the places appointed by the pilot.

It is forbidden to slip the anchors with buoy ropes.

At night, all vessels anchored must, besides the light forward, show a white light astern.

Vessels are forbidden to throw coal ash, rubbish, sweepings, or any other article into the waters of the port.

Firing shots, or burning torches, or rockets is not allowed within the artificial port of Leixoes.

Vessels with fire on board must not enter the artificial harbour, without a special license from the captain of the port.

The loading and discharging of dangerous cargoes cannot begin without a written authority from the captain of the port.

Smoking, and the use of fire, lights, or matches is forbidden on board vessels with dangerous cargoes, and also on board vessels employed in loading and discharging the same.

Signals.—The red flag hoisted in the pilot-boat of the artificial harbour signifies that the vessel, having permission to enter the port, should approach the same, in order to take the pilot on board.

At night the signal for entrance is made by burning one or more torches at the entrance of the harbour, on board the pilot-boat, and vessels wishing to enter must approach the pilot-boat.

Vessels within the artificial harbour requiring assistance must, if by day, sound the bell and hoist the signal of distress ; if at night, they must sound the bell and hoist a red light at the mast-head.

No vessel is allowed to enter the artificial harbour or to sail from it when there is a black ball hoisted at the head of the signal-mast, if by day ; or a red light between two green lights, if at night.

Pilotage.—Vessels up to 100 tons, in and out, 15 reis per net ton ; for every ton over 100 tons, 5 reis per net ton (maximum 4,000 reis, minimum, 600 reis). Compulsory.

Sundry Services.—The boat conveying the pilot, for entering or leaving, is to receive for every vessel piloted 1,600 reis ; for services not being for entering or leaving, if in one day, 1 milrei ; during more than one day, for every additional day, 800 reis ; for boats assisting in the work of mooring and unmooring vessels, when this is required, 1 milrei.

Portugal—Leixoes (*continued*).

Port Charges.—Harbour Dues :—Daily charges for remaining in the port : Over-sea vessels, per day and per ton net, for the first five days, 10 reis ; for the following days, 5 reis.

NOTE.—These vessels pay only one-half of the above charges on days on which they are obliged to completely suspend their commercial operations on account of the bar of the Douro being impassable, or on account of the sea and the weather. Over-sea vessels bound for the river Douro, or coming from the Douro, and coasting traders, per day and per ton, 2 reis.

Vessels putting in on account of damage, during the time indispensable for repairs, per day and per ton, 2 reis.

Boat Hire :—600 reis per day. **Ballast :—**120 reis per sack of sand ballast.

Labour :—600 reis per man.

LISBON.

Lisbon, in lat. $38^{\circ}45' N.$, long. $9^{\circ}11' W.$, stands on the northern bank of the Tagus, about 7 miles from its mouth. Distance by sea from Liverpool 983 miles.

Population.—356,009.

Imports.—Hemp, flax, linen cloths, iron, steel, salt fish, timber, pitch, tar, corn, silk, cotton and woollen goods, cod-fish, hardware, ale, porter, coal, etc.

Exports.—Wine, fruit, salt, oil, wool, leather, iron ore, pit-props, and cattle.

Accommodation.—The river forms a safe harbour, in which the largest vessel can anchor close to the city. Vessels entering stop or anchor off Belem Castle to receive the visit of the health officer. Vessels of 150 tons can ascend the river as far as Azambuja. The bar has 6 to 8 fathoms at low water springs, and is never impracticable even in depths of winter with S.W. gales. There are good leading lights into the harbour.

The Lisbon bar has two channels (N. and S.), each having 53 ft. of water at high water ordinary spring tides and 49 at high neaps. The rise and fall of spring tides is about 12 ft. There is a large anchoring area, with mooring buoys, throughout the river. The first six of the quays described below can be reached at high water ordinary spring tides by vessels drawing 30 ft. The following six quays, which belong to the Portuguese Government, are included in the concession granted to Mons. H. Hersent. Railways in direct communication with all lines in the Peninsula run alongside most of these quays. At nearly all the quays are bonded warehouses, reserved spaces for discharge of coal, etc. Ballast, fresh water, and supplies can be had.

Alcantara Quay.—Length, 5,084 ft. ; depth at high water, ordinary spring tides, 43 ft. ; depth at low water, ordinary spring tides, 31 ft. There are seven travelling hydraulic cranes to lift from $\frac{1}{2}$ to $2\frac{1}{2}$ tons. “Temperley” transporters for the discharge of coal.

Rocha Quay.—Length, 1,213 ft. ; depth at high water, ordinary spring tides, 33 ft. ; depth at low water, ordinary spring tides, 21 ft. There is a steam crane to lift 3 tons. “Temperley” transporters for the discharge of coal. This quay, which is situated along the dry docks, is fitted with cranes to unballast ships, previous to their entering the docks.

Santos Quay.—Length, 2,788 ft. ; depth at high water, ordinary spring tides, 33 ft. ; depth at low water, ordinary spring tides, 21 ft. There are

Portugal—Lisbon (*continued*).

three travelling hydraulic cranes to lift $1\frac{1}{2}$ to $2\frac{1}{2}$ tons. "Temperley" transporters for the discharge of coal.

Custom House Quay.—Length, 822 ft. ; depth at high water, ordinary spring tides, 43 ft. ; depth at low water, ordinary spring tides, 31 ft. There are six cranes to lift from 1 to 3 tons.

Terreiro-do-Trigo Quay.—Length, 1,640 ft. ; depth at high water, ordinary spring tides, 43 ft. ; depth of water at low ordinary spring tides, 31 ft. There are steam cranes to lift from $2\frac{1}{2}$ to 3 tons. "Temperley" transporters for the discharge of coal.

Sant' Apolona Quay.—Length, 1,968 ft. ; depth at high water, ordinary spring tides, 43 ft. ; depth at low water, ordinary spring tides, 31 ft. There are steam cranes to lift from $1\frac{1}{2}$ to 12 tons. "Temperley" transporters for the discharge of coal.

Arsenal Quay.—Length, 100 ft. ; depth at high water, 30 ft. ; depth at low water, 18 ft. There are cranes to lift 60 tons and sheers worked by steam.

No. 2 Quay of the Companhia Real dos Caminhos de Ferro Portuguezes.—Length, 222 ft. ; depth at high water, 32 ft. ; depth at low water, 30 ft. There are cranes to lift from 3 to 22 tons.

There are three dry docks and a patent slip.

Government dock	is	$322\frac{3}{4}$ ft. long,	43 ft. wide at the entrance,	and	27 ft. on the sill.
"	"	No. 1. is 613 "	"	80 "	" " " " " $32\frac{3}{4}$ "
"	"	No. 2. is 382 "	"	$47\frac{1}{2}$ "	" " " " " $26\frac{1}{4}$ "

The length given is over all ; the width is the high water ordinary springs level ; the depth on the sill is at high water ordinary springs. The patent slip has a cradle 170 ft. long, and a lifting power of 300 tons. Repairs of all kinds can be effected by day or night, as the docks are lighted by electricity.

Lisbon possesses a spacious lazaretto for the reception of passengers and the deposit of merchandise when under quarantine, on the south bank of the river. On the north bank there has recently been established an up-to-date post of disinfection for passengers and luggage.

Quarantine Laws and Regulations.—These have been revised and are now quite tolerant. It is impossible to describe the new regulations, but the practical effect is that quarantine is seldom imposed on passengers arriving in vessels from an infected port, i.e., with a foul bill of health, unless there have been cases of sickness during the voyage.

Vessels unprovided with a Portuguese consul's certificate of health from their last port have to pay a heavy quarantine tonnage duty. Even vessels bound to foreign ports, and putting in here in distress, not having a bill of health from the authorities of their last port, have to pay this duty.

Customs Rules.—These are altered and simplified, it being no longer necessary that the masters of vessels should bring with them the manifest of cargo.

Fresh water for ship's use is delivered alongside or in lighters with iron tanks and pumping appliances, to ships moored in the river.

Time Signals.—Chronometers can be checked. A black ball is hoisted half-way up the mast, on the S.E. angle of the Naval School near the Marine Observatory, 5 minutes before the signal. The ball is hoisted close up at 3 minutes before the signal, and dropped at 1 p.m. Lisbon (Observatory) mean time, equal to 1 h. 36 m. 44.7 s. Greenwich mean time, and 1 h. 0 m. 11.1 s. local mean time.

Pilotage.—Pilots will generally be found off the entrance ; their

Portugal—Lisbon (continued).

boats, schooner rigged, with the letter P on their sails, carry a blue flag hoisted at the mast head. The charge for piloting foreign and national vessels in and out is—up to 240 reg. tons, 30 reis per reg. ton; for every additional reg. ton up to 500 reg. tons, 10 reis extra. The maximum inward and outward pilotage is limited to 13,500 reis.

Port Charges.—For cargo dues see **Portugal**.

Anchorage Dues.—Anchorage dues were imposed by Royal Decree, on October 13, 1908, so far as the port of Lisbon was concerned. These new dues are levied on the gross registered tonnage of all steamers lying at anchor or at a buoy to the E. of Belem Tower, at the rate of 10 reis per ton. Should the steamer afterwards proceed alongside any of the quays (for which quay dues are charged at the rate of 50 reis per net reg. ton), then the payment of anchorage dues is taken into account. The above charge of 10 reis per gross reg. ton is subject to the following reductions: 60 per cent to Portuguese ships; 50 per cent. to all steamers of regular lines calling at Lisbon; 40 per cent. to steamers after three calls during the same year; 75 per cent. to all steamers of regular lines which do not remain in port more than 24 hours.

The following are the usual regular charges for commission in this place:—

Commission on gross sales	2½ per cent.
„ „ shipments	2½ „
„ „ disbursements	2½ „
„ „ remitting	½ „
Brokerage factorage on bills	⅛ „
Interest factorage on advances	½ „ per month.
Corn factorage on flour	100 reis per barrel.
„ „ grain	400 „ moio.

The commission on vessels putting into this port is as follows:—

Commission on money disbursed where bills are drawn	5 per cent.
„ „ sales where sufficient part of the cargo is sold to pay disbursements either on the owner's or underwriter's account	5 „
Commission on estimated value of the whole or whatever part of the cargo is landed and re-shipped	1¼ „

Pro Forma Charges on a steamer coming from Cardiff with a cargo of 3,500 tons coal:—

	Reis.	£	s.	d.
To arsenal, pilotage in and out, etc.	30,000			
To Custom House, port charges, etc.	422,580			
To boat in attendance on arrival	2,000			
To stevedore, discharging 3,500 tons at 7d. per ton		102	1	8
To gratuities to pilot and Custom House officers . . . say	4,000			
To boat mooring and unmooring . . . say	6,000			
To H.B.M. Consul		0	2	6
To stamps on freight account	800			
To harbour office, for quayage	67,780			
	533,160	=	104	19 1
To agency			3	3 0
			£210	6 3

Oporto.

Oporto, in lat. 41°10' N., long. 8°40' W., is situated on the N. bank of the Douro, about two miles from the sea. Distance by sea from Liverpool, 796 miles.

Population.—167,955.

Portugal—Oporto (continued).

Imports.—Iron, tea, sugar, coffee, rice, hemp, flax, dried fish, coal, cod-fish, stationery, hardware, cottons, woollens, and every description of fancy and manufactured goods, besides Baltic and colonial produce.

Exports.—Wine, oil, sumach, cabinet work, fruit, wool, cream of tartar, salt, leather, cork, slate, copper and antimony ore, preserves, onions, garlic, hardware, and manufactured woollen and cotton goods.

Accommodation.—As the sands shift frequently on the bar, the depth of water is uncertain, but usually it is not safe for any vessel to cross drawing more than 17 ft. at neap tides, and 17½ to 18 ft. at spring tides, and then it must be at high tide, a smooth sea, and with a pilot on board.

A red flag is hoisted on the masthead at the castle of San João da Foz, as a signal for vessels to enter; but if a pennant or whiff is hoisted along with the red flag only small vessels can enter. Vessels off the bar can communicate with the shore by Marryat's signals. Spring tides rise 10½ ft.; neaps, 3½ ft.; but the weather and the currents in the river have great influence on the rise and fall of the tides. When a heavy sea has continued for some time on the bar, the pilots will not bring in or take out vessels until they have sounded, as the heavy surf shifts the sand and alters the channel.

There is plenty of water inside the river for vessels not drawing more than 18 ft. in the clear channel, but unfortunately the Douro is only buoyed near the entrance, and as there are several rocks and sandbanks in other parts, shipmasters are forbidden to shift without a pilot on board.

In winter, after heavy falls of snow up the country, if sudden and continuous rains come on, the river rises to an enormous extent—it was once known to run 12 to 13 knots—to the great danger of the shipping, when all the moorings they have are barely enough to ensure their safety; but with telegraphic communications now existing, vessels get timely notice to make fast and prepare for the flood. All vessels discharge their cargoes into lighters, with the exception of fish vessels from Newfoundland.

Custom House Regulations.—1. Masters of merchant vessels entering this port are required:

(a) To consider the bar pilot who comes on board as a fiscal agent as long as he is not substituted by the proper fiscal authority.

(b) To give up at Foz, on entering, the gunpowder carried for the ship's use, always provided that it exceeds 5 kilos. (10 lb.) in weight, which will be returned on leaving.

(c) To declare, on entering, the ship's name, description, name of master, measurement, whence arriving, number of crew, names and number of passengers for the port and number in transit, description of cargo, description and quantity of inflammables or explosives on board, nature of business intended at the port, name of consignee.

(d) To proceed up the river directly they have permission from the health officers so to do, to the anchorage indicated to them, where the vessel will receive her entrance visit; and the ensign shall be displayed at the fore mast until the said visit has concluded. Except in cases of *force majeure* no vessel is allowed to diminish her speed after entering the bar until she has received the health visit and fiscal visit, nor, after receiving this visit, until letting go her anchor at the spot indicated to her. *Force majeure* is considered the case in which a tug-boat, after towing a vessel into the port, has to leave her at Sobreiras to return and take advantage of the tide to tow in other vessels. In this case, however, the master should, at Cantareira,

Portugal—Oporto (continued).

request that a fiscal guard be put on board, who shall remain until the vessel comes to her anchorage.

(e) To present at the said official visit to the fiscal officers the following documents : The cargo manifest and corresponding bills of lading ; a declaration stating any additional packages, except tobacco, which, having been received on board after signing the manifests, were not included in the same ; a list of samples which, having no commercial value, were not included in the manifest ; a list of provisions and stores ; a list of passengers, stating the number and nature of packages of luggage belonging to each one ; a list of crew ; a declaration as to there being or not cargo for other ports on board ; and a list of any articles found on the high seas.

The master may further present any other declaration with regard to the cargo ; whether he has consumed or jettisoned any part of that which is manifested, or sold it at a port he may have put into in distress, or, finally, in consequence of doubt as to the deficiency or excess in the number of packages. If the vessel has sold or received cargo at an intermediate port, the master's declaration should be attested by the Portuguese consul at such port. If there has been jettison or damage the master should present a declaration thereof or his marine protest. On the termination of the visit and the declaration of due entrance having been signed no further statement with reference to any difference between the amount of cargo and the documents of entrance will be accepted or entertained.

(f) To present at the said official visit all tobacco not consumed during the voyage belonging to the crew or to passengers in transit. This tobacco, after setting apart the quantity absolutely necessary for consumption on board, will be sealed up in one of the lockers of the vessel under the responsibility of the master. Captains of vessels are specially requested to employ every means in order to prevent members of their crews landing with tobacco, matches, or tinder allotted for their use on board during the ship's stay in port, to avoid getting into trouble with the authorities.

(g) To deliver the parcels of samples to the visiting officers, allowing them to search the effects of the master as well as those of the crew.

(h) To send to the Custom House all passengers' luggage as soon as the vessel has received her visit and before discharging has commenced.

(i) To present at the Custom House, within twenty-four hours of the official visit, a Portuguese translation of the manifest.

(k) To present the manifest of the cargo in transit when the discharge of a part or the whole of such cargo is requested. The hatchways and bulkheads of vessel with cargo in transit will be sealed, and anything subject to duty will be properly taken charge of, except provisions and stores strictly necessary for consumption or use of the vessel during her stay in the port.

(l) To exhibit during the night a white light at the foremast head.

(m) Not to permit, beyond the craft employed in discharging, any others to come alongside without the proper license, whether the vessel is discharging or has cargo in transit.

(n) To preserve intact all seals placed by the Custom House officers upon the hatchways or bulkheads of the vessels.

(o) To sign personally or through his representative the discharge sheets.

2. Masters are not allowed, except by permission or order from the Custom House : (a) To weigh anchor either for leaving the port or for changing their anchorage, except in case of accident.

Portugal—Oporto (*continued*).

(b) To discharge, tranship, or receive cargo, ballast or water. (All goods and merchandise, not having been dispatched through the Custom House, found on board vessels receiving cargo will be considered as contraband.)

(c) To open packages shipped as cargo at this port. (The mere fact of opening such packages is considered a breach of the regulations, but the withdrawal of any article therefrom would amount to contraband.)

(d) To communicate or allow his crew to communicate with other vessels in the anchorage ground.

(e) To land or embark without presenting themselves to the nearest fiscal branch on the north shore of the river, both coming and going.

3. The discharge of cargo being complete and the vessel cleaned out, masters are required : (a) To apply to be visited when all their cargo is discharged, and from the moment of presenting such application until such visit has been made to keep their ensign displayed at the foremast.

(b) To have their vessels in a proper condition to be visited, the canvas out of the lockers, the sails unfurled, peaks clear, the ballast in such a condition that the inner ceiling of the vessel close to the keelson may be examined and all spaces for stowage open, otherwise they may have to be burst open. At this visit all articles met with which have not been legally declared will be considered as contraband.

(c) To proceed with their vessels, after they have been visited, to the anchorage pointed out to them.

(d) To sign the memorandum for receiving cargo, without which no article may be received on board without special license.

4. Masters are allowed : (a) To receive provisions bought at the public markets for the use of the crew during their stay in the port, but which must be accompanied by an order signed by the master and be presented at the branch office of Customs at the place of embarkation.

(b) To send on shore, between sunrise and sunset, accompanied by an order signed by the master, empty vessels for the conveyance of provisions and water, besides any articles that have been used connected with the service of their ships.

5. Masters are warned : (a) That it is prohibited to heave ballast into the river, under a special penalty levied by the Captain of the Port.

(b) That they are not allowed to land until the official visit of entrance has concluded, except for justifiable motives.

(c) That they are obliged to fully carry out any instructions communicated to them by the fiscal officers and Custom House guards.

(d) That all contravention of the above mentioned regulations, when they do not amount to contraband, are considered by the laws of the country a transgression of the fiscal regulations, and as such punishable with a fine of 2,000 to 300,000 reis, or more in exceptional cases.

(e) That by these laws the fiscal officers are prohibited from receiving presents under any pretext whatever ; both the giver and the receiver incurring equally the penalty for so doing.

(f) That they are to provide board and lodging under dry deck to the guards on duty in their vessels.

Vessels obliged to perform quarantine must proceed to Leixoes.

Pilotage.—Compulsory. Rates vary according to the state of the tides and weather, say from £7 10s. to £10, in and out, according to tonnage.

Portugal—Oporto (continued).

Steamers are charged less. When a pilot is detained off the bar he has to be paid 4s. a day.

Towage.—Across the bar, in or out, sailing vessels :—

Tons register.		Reis.	Tons register.		Reis.
From	Up to 106 tons.	18,000	From	376 to 397 tons.	54,000
"	107 to 115 tons.	20,000	"	398 " 419 "	56,000
"	116 to 124 tons.	22,000	"	420 " 441 "	58,000
"	125 " 132 "	24,000	"	442 " 464 "	60,000
"	133 " 141 "	26,000	"	465 " 486 "	62,000
"	142 " 150 "	28,000	"	487 " 508 "	64,000
"	151 " 159 "	30,000	"	509 " 530 "	66,000
"	160 " 168 "	32,000	"	531 " 552 "	68,000
"	169 " 177 "	34,000	"	553 " 574 "	70,000
"	178 " 199 "	36,000	"	575 " 596 "	72,000
"	200 " 221 "	38,000	"	597 " 618 "	74,000
"	222 " 243 "	40,000	"	619 " 640 "	76,000
"	244 " 265 "	42,000	"	641 " 662 "	78,000
"	266 " 287 "	44,000	"	663 " 684 "	80,000
"	288 " 309 "	46,000	"	685 " 706 "	82,000
"	310 " 331 "	48,000	With 2,000 reis additional for every 25 reg. tons more.		
"	332 " 353 "	50,000			
"	354 " 375 "	52,000			

Vessels in ballast, in or out, 20 per cent. reduction.

Sometimes, especially when there is some current in the river, steamers need a tug to cross the bar, and the charges are as follows : Up to 300 net reg. tons, 40,500 reis, and an additional 2,250 reis for every 50 reg. tons above 300 ; for use of hawser, 13,500 reis. River service, 3,000 reis and upwards, according to agreement.

Port Charges.—**Harbour Dues** :—See **Portugal**. **Ballast** :—Sand, 1s. per ton ; stone, 2s. 6d. **Lighterage** :—About 5d. per ton. **Water** :—1s. per 100 gallons put on board ; the quality is excellent. **Beef** :—6d. to 6½d. per lb. : vegetables and provisions cheap and abundant. **Commission** :—On inward freight, 2½ per cent. ; outward, 5 per cent. ; on cash advanced, 3 per cent. ; if the cargo imported consists of coal, a commission of 2 to 5 guineas is charged only. Bills on London are drawn at 90 days ; exchange varies from 46d. to 47d. per milrei. Boat hire, 500 to 600 reis per day.

Pro Forma Charges on a steamer of 923 reg. tons, with a cargo of 1,961 tons of coal in, and ballast out, drawing 18 ft. loaded :—

	Reis.
Harbour dues	251,085
Brokerage, £3 3s. at 4,900 reis = £1	15,430
Pilotage in and out	43,800
Semaphore	3,200
Boat hire	3,000
Discharging as per charter, 7d. to 9d. per ton	357,700
Telegrams, petties, etc.	9,000
Gratuities	4,500

687,715 = £135 7s. 6d.

POMERON.

Pomeron, or Pomerio, on the river Guadiana, is about 38 miles above Villa Real.

Export.—Sulphur ore.

Accommodation.—In most parts of the river Guadiana, as far as Pomeron, the depth varies from 3 to 6 fathoms. Vessels loading from the mines anchor here, where the mineral is shipped. A vessel of 400 tons can easily be loaded in about 5 hours. About a third of a mile below

Portugal—Pomeron (*continued*).

Pomeron a vessel can be grounded on a sandy beach, and her bottom cleaned or repaired at low water. Repairs to machinery can be effected at the mine of S. Domingo.

Vessels bound here must report at Villa Real.

Port Charges.—Discharging Ballast :—8*d.* per ton of 16 cwt. **Loading Cargo :—**25*s.* to 30*s.* for 160 tons; additional $\frac{1}{2}$ *d.* per ton for use of baskets. **Agency Fee :—**3 milreis per vessel. For pilotage and other charges see Villa Real.

Pro Forma Charges on a brig of 274 tons reg., outwards with cargo of sulphur ore :—

	Reis.
Ship-chandler's account	22,425
Steam-tug over the bar, 274 tons, at 60 reis	16,440
Consular fees	2,250
Towage down the river, 105 reis per ton	28,770
Custom House dues	40,880
Fee to Captain of the Port	945
Pilotage in and out	22,000
Postages	860
Agency	3,000

137,570 = £27 1*s.* 3*d.*

Pro Forma Charges on a steamer of 475 tons reg., ballast in and cargo out :—

	Reis.	£	s.	d.
Gratuity to pilot and officers, inwards		0	6	6
„ „ shute man		0	4	0
„ „ pilot, outwards		4	0	0
Petty expenses and Consul's fees		1	5	0
<i>Agent's Account—</i>				
Custom House dues	34,170			
Pilotage, in and out	17,400			
River pilot, for extra services	5,400			
Agency	3,000			

59,970 = 11 16 1

Lightening to 14½ ft. (so as to cross the bar), 240 tons sulphur ore, and putting on board ship outside of bar at 790 reis per ton = 189,600 reis = 37 6 5

£54 18 0

SETUBAL.

Setubal, or St. Ubes, in lat. 38°32' N., long. 8°58' W., is on the N. side of the estuary of the river Sado.

Population.—22,074.

Exports.—Salt, oranges, lemons, grapes, corn, wine, sardines, and cork wood.

Accommodation.—There is a bar at the mouth of the river, having depth on it at ordinary high spring tides of 22 to 23 ft., and at ordinary high neaps of 19 to 20 ft. At low tides the depth decreases to 12 and 15 ft. respectively. In the port there is 48 ft. at high springs, and 39 ft. at low. The anchorage is good and safe. Loading and discharging is done by lighters carrying from 20 to 40 tons. There is a quay 493 ft. long, with 9 ft. of water alongside, at ordinary high springs, but only vessels of 100 to 150 tons reg. use it.

Vessels from the N. should keep about half a mile distant from the high land lying between Cape Espichel and the bar. There are two buoys, one off

Portugal—Setubal (continued).

the entrance to the channel on the south side painted red, and the other inside on the north painted black.

Port Regulations.—1. The pilot takes the vessel right to the anchorage in the harbour and there they wait the health visit, previous to which no person is to land from the ship, or be received on board, except the Custom House and health officers.

2. As soon as the health officer comes on board, the master must produce his bill of health, which must agree with the number of the crew and all other persons on board.

3. In case the vessel is placed under quarantine, neither the master nor any person from on board must land, nor go on board any other ship; but should anything be required from the shore, the master will make a signal for the proper officer, who will attend and procure what may be required.

Vessels are subject to quarantine in the following cases: Want of a bill of health from the last place the vessel came from, or the want of a ballast certificate from the Portuguese Consul or other authority in the place; errors or omissions in the bill of health, which must specify the exact number of persons on board, women and children included; having sickness on board; having had intercourse or communication with other ships at sea; when the crew, in their examination, do not agree in their answers; and, lastly, when ships come from a port or country where contagious sickness prevails.

4. The Custom House officers next go on board, no one being allowed to land before this visit. The master must present a manifest of his cargo, if any, and of the ship's stores, have it translated, and the names of the crew and passengers, if any, on the back.

5. Shipmasters are warned to be particular in producing and exhibiting all the tobacco on board to the officers, who will leave a small quantity for immediate use; the remainder is put into a bag and sealed up, and is taken on shore to the Custom House, where it remains deposited until the vessel is ready for sea, when it is returned. A heavy penalty is at all times exacted upon finding the most trifling quantity of tobacco after the report has been made to the officers. The visit is sometimes repeated when least expected.

6. When ballast or cargo has been discharged, the flag is to be hoisted to the fore, so as to notify the Custom House officials that they may pay their "empty" visit.

7. If a vessel brings any goods to be again re-exported, a Custom House officer remains on board until the vessel leaves the port.

8. When a vessel puts into this port in distress, the master, with his crew, must make the necessary declaration on oath at the Custom House without which justification or declaration the master cannot enjoy the advantage of *franquia*, and must pay the full duties and port charges.

9. No boat can take anything from one vessel to another without being attended by a Custom House officer.

10. No vessel is permitted to sail without a pilot, who is paid beforehand, and will come on board when agreed upon, or a signal is made for him, which, however, it is best to make the day before.

Pilotage.—30 reis per reg. ton up to 200 cubic metres; 10 reis for every cubic metre above 200. Maximum 10,000 reis; minimum 5,000 reis. Pilot receives for his services on board, outside the harbour, or inside the river Sado, 1,200 reis the first day, and 800 reis per day after.

Portugal—Setubal (*continued*).

Port Charges.—Labour :—3s. 6d. per day. **Bill of Health :—**5s.
Discharging Ballast :—240 reis per moio (about 1s. 9d. per ton). **Loading Charges :—**Salt—Vessels loading up to 300 moios, 100 reis per moio ; from 301 to 450, 110 reis ; from 451 to 600, 120 reis ; from 601 to 800, 130 reis ; from 801 to 1,100, 140 reis ; from 1,101 to 1,300, 150 reis ; from 1,301 and upwards, 160 reis. (One moio is equal to about three-fourths of a ton).
Beef :—7d. per lb. **Water :—**3s. per ton (1,000 litres).

Quarantine charges are the same as at Lisbon ; but a vessel can discharge ballast and take in cargo whilst performing quarantine, and then proceed to Villa Real de San Antonio, Figueira, Sines, Oporto, etc.

Pro Forma Charges on a British steamer loading 1,531 moios of salt :—

	Reis.
Pilotage inwards, outwards, and gratuity	21,600
Heaving in 1,531 moios of salt	244,960
Trimming cargo	16,000
British Vice-consul	620
Use of four sails	8,000
Custom House dispatch, stamps, etc.	10,960
Telegrams and postage	2,500
Provision bill	10,920
Boat attendance	4,000
Clearance, £5	24,615
Water	3,200
	<hr/>
	347,375 = £68 7s. 7d.

SINES.

Sines is in lat. 37°58' N., long. 8°51' W.

Population.—5,000.

Exports.—Cork, oranges, sheets, and stoppers.

Accommodation.—There is 10 to 14 fathoms at high water, and from 9 to 12 fathoms at low water. At lowest spring tides, 9 to 11 fathoms. Sailing vessels anchor in about 90 ft. and steamers in about 60 ft., and are loaded and discharged by 1 ton boats. The anchorage is open to the S.W., but is quite safe for steamers. Bottom, sand and rocks. There are no docks or quays from here to Cape St. Vincent.

Pilotage.—Compulsory for steamers and sailing vessels ; inwards, 1,500 reis.

Port Charges.—Clearance Fees :—10,645 reis. **Boat Hire :—**1,000 reis per day. **Stevedores :—**800 reis per day. **Custom House Clerk :—**1 500 reis. **Health Certificate :—**1,100 reis. **Anchorage :—**1,500 reis.

Vessels do not pay tonnage, but pay, apart from Custom House entry, loading and additional dues to the total of 10,645 reis.

TAVIRA.

Tavira, in lat. 37°7' N., long. 7°39' W., is about 17 miles E. of Cape St. Mary.

Population.—12,175.

Exports.—Locust beans, etc.

Accommodation.—There is 12 ft. of water on the bar at spring

Portugal—Tavira (*continued*).

tides, but the captain of the port will not allow any vessel to cross drawing more than $10\frac{1}{2}$ ft.

All kinds of provisions can be obtained here.

Pilotage.—In and out, 60 reis (about 3*d.*) per cubic metre. Pilot boat, 9*s.*; extra for pilot, 3*s.* 7*d.*; extra for each day kept on board, 3*s.* 7*d.*

Port Charges.—Tonnage and Health Dues:—See **Portugal**. **Interpreter:**—£1 for vessels not exceeding 100 tons, and £1 extra for each additional 100 tons. **Discharging Ballast:**—£1 for each lighter, loading about 16 tons. Allowance bill for each lighter, 2*s.* 4*d.* Ballast guard, 1*s.* 4*d.* per day. **Bill of Health:**—4*s.* 10*d.* **Customs Dues:**—Including certificate (1*s.* 8*d.*), stamps (4*s.* 10*d.*), and permit (3*s.*), 14*s.* 10*d.*, and an additional 1*s.* 2*d.* for each lighter of cargo taken. **Clearing:**—Inwards and outwards, for vessels up to 200 tons, £1.

VIANA DO CASTELLO.

Viana do Castello is in lat. $41^{\circ}42'$ N., long. $8^{\circ}48'$ W.

Population.—10,000.

Imports.—Coal, wheat, iron, etc.

Exports.—Wood, wine, etc.

Accommodation.—On the bar the depth varies from 16 to 17 ft. at high water ordinary springs, and from 14 to 15 ft. at ordinary neaps. There is a good anchorage, but no mechanical appliances for loading and discharging. The length of the entrance channel to the dock is 1,049 ft., and the width $391\frac{1}{2}$ ft. The length of the dock is 984 ft., and the width 220 ft. The depth of the channel is about 2 ft. greater than that on the bar.

Pilotage.—Compulsory. Steamers and sailing vessels, 150 reis per reg. ton.

Port Charges.—Entrance Fees:—5,000 reis. **Ballast:**—400 reis per ton. **Labour:**—140 to 150 reis per ton. **Brokerage:**—9,000 reis.

Pro Forma Charges on a steamer of 300 reg. tons, with a cargo of 700 tons of coal in and ballast out, drawing 13 ft. loaded:—

	Reis.
Harbour dues at 100 reis per ton of 1,000 kilos.	71,100
Brokerage	9,000
Pilotage in and out.	45,000
Entrance (Custom House) and bill of health	8,000
Interpreter, 1,000 reis per day, 5 days	5,000
Stevadore, 700 tons at 140 reis per ton	98,000
Ballast, 100 tons at 400 reis per ton	40,000

276,100 = £54 7*s.* 0*d.*

Note.—Vessels carrying a cargo of goods other than coal pay 250 reis per ton landed.

VILLA NOVA DE PORTIMAO.

Villa Nova, in lat. $37^{\circ}8'$ N., long. $8^{\circ}31'$ W., is situated on the W. bank of the river Arade, about $1\frac{1}{2}$ miles from its mouth.

Population.—10,000.

Imports.—Coal, tin plates, and oil for preserving fish.

Exports.—Sardines in oil, figs, almonds, locust beans, corks, and corkwood.

Portugal—Villa Nova de Portimao (continued).

Accommodation.—The bar has only 7 ft. on it at low water, and 15 ft. at high water springs; inside, and for a distance of about 3 miles, there is from 3 to 11 fathoms.

Vessels having to perform quarantine are obliged to proceed to Lisbon.

Pilotage.—Compulsory for foreign vessels, and Portuguese vessels coming from foreign ports. **Tariff**—Vessels up to 150 reg. tons, 30 reis per reg. ton; above 150 reg. tons, 10 reis per reg. ton; (maximum 6 milreis). Extra services, in or outside the bar, 1 milrei for the first day, and 800 reis for the following days; pilot's boat, 1 milrei; assistance boat, in or out, 2 milreis; if required in the river, 2 milreis per day.

Port Charges.—**Port Dues**:—Vessels with cargo, 250 reis per cubic metre or ton manifested. **Wharf or Quay Dues**:—1,000 reis for loading and 1,000 reis for discharging. **Labour**:—700 reis per man per day. **Moor-ing**:—1,000 reis; unmooring, 1,000 reis. **Boat Hire**:—1,000 reis per day. **Ballast**:—2,600 reis per 10 tons, delivered alongside the vessel; ballast guard, 240 reis per day. **Brokerage**:—6,000\reis. **Provisions**:—Beef, 240 reis; mutton, 200 reis; pork, 200 reis, per kilo. **Towage**:—Sometimes the gunboats tow vessels at 100 reis per reg. ton. **Water** can be obtained on the wharf at 250 reis per cubic metre.

Pro Forma Charges on a steamer discharging a cargo of 573 tons of coal:—

	Reis.
Pilotage in	10,000
Pilotage out	10,000
Boat hire (7 days)	7,000
Discharging 573 tons at 7 <i>d.</i> per ton, as per charter, £16 14 <i>s.</i> 3 <i>d.</i>	85,575
Custom House account	81,945
Brokerage (according to charter)	13,500

208,020 = £40 19*s.* 0*d.*

Pro Forma Charges on a steamer loading a cargo of 800 tons of locust beans:—

	Reis.
Pilotage in	10,000
Pilotage out	10,000
British Consulate (visé of articles)	650
Custom House account	24,365
Boat hire (7 days)	7,000
Stowage of cargo as per charter (200 reis per ton)	160,000
Brokerage	13,500

225,515 = £44 7*s.* 10*d.*

VILLA REAL DE SAN ANTONIO.

Villa Real, in lat. 37°10' N., long. 7°26' W., is situated on the W. bank of the river Guadiana, about a mile from San Antonio Point.

Population.—About 9,600.

Imports.—Coal, iron, oil, tin plates, wood, etc.

Exports.—Copper ore, salted and pickled fish, fish oil, eggs, fruit salt, etc.

Accommodation.—At low spring tides there is about 6 ft of water

Portugal—Villa Real de San Antonio (*continued*).

on the bar (springs rise 12 ft.), but within vessels of 12 ft. draught can navigate as far as Pomeron at any time of the tide.

Provisions can be procured here.

Pilotage.—Vessels under 150 metres (about 132 tons), 30 reis per cubic metre, and 10 reis for each additional metre above 150, provided always that the pilotage on any vessel shall in no case exceed 58,400 reis, or be less than 800 reis.

River Pilotage.—1,200 reis for the first day, and 600 reis per day after.

Port Charges.—Port Dues :—Vessels with cargo in and out, 135 reis per cubic metre ; ballast in and cargo out, 90 reis ; vessels entering and clearing in ballast, 225 reis. **Steam-Tug :**—Between Villa Real and Pomeron, 60 reis per ton reg. each way.

AZORES.

ST. MICHAEL, OR S. MIGUEL.

Ponta Delgada, in lat. 37°50' N., long. 25°40' W., is the principal port of the island, and of the Azores.

Population.—About 20,000 (town).

Imports.—Coal, timber, petroleum, colonial produce, and manufactured goods.

Exports.—Alcohol, cereals, cattle, oranges, and pine-apples.

Accommodation.—The harbour, which is 59 acres in extent, is artificial, and vessels of any size can lie in comparative safety inside the breakwater. An open roadstead lies to the E. of the harbour, where vessels can anchor in 15 to 30 fathoms, exposed to all winds from the E. round to N.W. On the breakwater is a lighthouse, showing a fixed red light for a distance of 10 miles. The depth of water in the harbour varies from 5 to 12 fathoms, and the bottom consists of sand and rock. Vessels are obliged to moor inside the breakwater, and mooring buoys have been laid down by the harbour authorities.

The breakwater is 1,300 ft. long and is used as a quay. There are large warehouses and a coal store on it, and coal can be loaded direct into vessels alongside at the rate of 100 tons per hour. Vessels will find a depth of 24 ft. alongside at high water, ordinary springs, and 18 ft. at low water, ordinary springs. There are six cranes capable of lifting from 2 to 12 tons, for discharging lighters. Extensive repairs can be done to steamers or sailing vessels ; steamers can be tipped and propellers fitted. There is a slipway to raise vessels of 250 tons.

There is a maritime disinfecting station here, supplied with all the latest appliances as approved by sanitary science, by means of which shipping arriving with foul health bills from infected ports can be supplied with bunker coal under quarantine by shore labour, and passengers may be landed

Portugal—St. Michael, or S. Miguel (*continued*).

subsequent to undergoing a medical inspection by the health officer on board ship on arrival. Captains, passengers, chief officers, engineers, and pursers may come ashore without disinfection. Soiled linen or other wearing apparel must undergo disinfection, in the dry steam apparatus, before being admitted.

Vessels wanting pratique must hoist a quarantine flag on the foretop. They are visited by the health officer, to whom they must show their bills of health, before any person can come on board. After the health visit the Customs officer comes on board and requires, besides other particulars, a list of all stores, and, in case of discharging, a manifest and list of parcels. The tobacco on board is sealed up, and two Custom House guards are left on board if the hatches cannot be sealed.

Pilotage.—Compulsory for all vessels which anchor in the roads or come inside the harbour.

Vessels entering the harbour of—

	Reis.
Less than 300 reg. tons	5,200
300 to 599 reg. tons	8,450
600 to 999 reg. tons	11,700
1,000 to 1,999 reg. tons	14,300
2,000 reg. tons and upwards	18,200

Vessels shifting their berths in the harbour pay three-eighths of the above scale of pilotage. **Towage** :—By arrangement, and according to circumstances. The tug must be ordered three hours before the ship is ready to leave ; if after three hours the tug is kept waiting when ready, the ship has to pay £1 for every hour the tug is detained. In case the master decides not to leave the harbour after the tug is ready, he must pay the tug half the towage.

Port Charges.—Harbour Dues :—Vessels from abroad—from October 1 to April 30, 50 reis per gross ton ; from May 1 to September 30, 25 reis per gross ton (only for 8 days) ; after 8 days, an additional $1\frac{1}{4}$ reis per day, per gross ton. **Light Dues** :— $1\frac{1}{4}$ reis per reg. ton. **Mooring** :—According to the tonnage of the vessel. **Boat Attendance** :—According to the tonnage of the vessel. Tonnage dues are paid by vessels on the quantity of cargo loaded or discharged. Steamers calling for coal, whaling ships, vessels entering for orders, provisions, or water, and vessels in distress, are exempt from the harbour dues, but have to pay all other charges. There are also small charges for the use of mooring buoys and bollards, anchors and chains. **Stores and Provisions** :—Fresh beef, mutton, pork, poultry, eggs, and vegetables grown on the island are cheap. Imported provisions are expensive, on account of the import duty. **Fresh Water** :—The water from springs in the mountains is excellent, and costs 6s. 6d. per ton pumped on board.

Cable :—The charge for telegraphic communications with Europe, by the Eastern Telegraph Cable Company, is 10d. a word.

Hospital :—The hospital, which can admit 500 sick, is very spacious and well managed by first-class physicians and surgeons. Sick sailors are admitted at a charge of 1,000 reis per day.

Portugal—St. Michael, or S. Miguel (continued).

Pro Forma Charges on a steamer with a cargo of 3,379 tons of coal :—

	Reis.
Pilotage in and out	5,250
Customs officers and guards	21,363
Captain of port, health visit, and bill of health	17,350
Hire of mooring chains	104,195
Mooring, unmooring, and lighter	44,000
Diver to clear the moorings	10,000
Boat attendance	16,000
Harbour and tonnage dues	767,328
Labourers on board discharging 3,312 tons at 8d. per ton	662,400
Stamps for license to discharge	7,500
Provisions account	156,600
Fresh water account	18,000
British Consul account	750
Telegrams, postages, and petties	14,970
Cash to captain	30,000
Entering and clearing at Customs	5,000
Commission 2 per cent. on freight	131,625
Agency fee, £5 5s.	31,500
	<hr/>
	2,043,831

At the current (1908) rate of exchange, 6,000 reis per £ = £340 12s. 9d.

Pro Forma Charges on a steamer calling for coal, of 2,830 gross tons :—

	£	s.	d.
200 tons of Welsh coal at 29s. f.o.b.	290	0	0
Pilot, guards, health visit; boat hire, moorings, and light dues	7	14	3
American bill of health visé	0	10	6
Provisions account	5	4	9
Fresh water account, 6 tons	1	16	0
Telegrams, postages, and petties	0	7	6
	<hr/>		
	£305	13	0

Pro Forma Charges on a sailing vessel of 1,561 reg. tons, calling for orders :—

	Reis.
Pilotage in and out, and light dues	25,401
Customs officers and guards	4,820
Captain of port and health visit	2,850
Hire of mooring chains	17,807
Mooring, unmooring, and lighter	44,000
Tugboat, in and out	90,000
Entering and clearing at Customs	5,000
Cash to captain	12,000
Provisions account	78,000
Telegrams, postages, and petties	12,600
French bill of health and certificate	6,000
2½ per cent. on advances	7,461
Agency fee, £1 1s.	6,300
Insurance of draft	4,800
	<hr/>
	317,039

At the current (1908) rate of exchange, 6,000 reis per £ = £52 16s. 10d.

Portugal.**FAYAL ISLAND.**

Fayal Island is in lat. $38^{\circ}35'$ N., long. $28^{\circ}45'$ W.

Population.—24,000.

Imports.—Sugar, tea, coffee, hardware, dry goods, timber, and petroleum.

Exports.—Maize, cattle, butter, straw goods, and embroideries.

Accommodation.—The port, at Horta Bay, can accommodate 24 large vessels and a number of smaller ones. The greatest depth is 54 ft. at high water, and 49 ft. at low water, the shallow part of the port having a depth of 24 ft. at high water and 19 ft. at low water. Coal can be loaded at the rate of 50 tons per hour, and it is expected that the rate will shortly be increased to 70 tons. There are two steam cranes to lift 10 tons and 25 tons respectively.

The mole has been completed, but the quays along it are not yet finished though along the land within the breakwater the quays have been constructed. There are mooring buoys in the breakwater basin, 190 yards from the mole, in 6 fathoms at high water.

Small repairs to iron vessels can be carried out by the Government Breakwater Works.

Time Signals.—There is a standard clock in the offices of the Telegraph Co., regulated from Hamburg Observatory, where chronometers can be compared.

Pilotage.—Compulsory. Vessels up to 70 tons, 5s.; from 70 to 141 tons, 6s.; from 141 to 282, 7s.; from 282 to 424, 8s.; over 424, 9s.; inside the breakwater vessels pay double the above rates.

Port Charges.—Harbour Dues:—Foreign vessels staying in port: From 1 to 3 days, 5 reis per reg. ton per day; from 3 to 8 days, 6 reis per reg. ton per day; after 8 days to 30 days, 10 per cent. on the amount paid for 3 days, for each day; after 30 days, 5 per cent. on the same amount, for each day. (Portuguese vessels up to 400 tons have a reduction of 20 per cent.)

Mooring:—About 6d. per ton. **Towage:**—20s. to 30s. per hour. **Boat Hire:**—4s. per day. **Consular Fees:**—2s. 6d. per vessel. **Ballast:**—2s. to 2s. 3d. per ton. **Labour:**—3s. 6d. per day.

Vessels in distress, or calling for repairs, coal, or provisions, and whaling vessels, are exempt from any of the above charges.

Pro Forma Charges on a steamer of 1,200 reg. tons:—

	£	s.	d.
Harbour dues (8 days inside the breakwater)	13	5	5
Pilotage in and out	1	16	0
Towage, two hours' work	3	6	8
Boat hire	1	13	4
Consular fees	0	2	6
	£20	3	11

FLORES.

The island of Flores is in lat. $39^{\circ}25'$ N., long. $31^{\circ}15'$ W.

Population.—7,850.

Portugal—Flores (*continued*).

Imports.—All kinds of merchandise, sugar, tea, coffee, flour, etc.

Exports.—Butter, cattle, and hides.

Accommodation.—Steamers and sailing vessels lie at one of the two anchorages in 20 or 25 fathoms of water, cargo being discharged by means of lighters. Steamship communication with Oporto, Lisbon, and the United States.

Pilotage.—Not compulsory. Rates, steamers—about 7s. 6d. per day; sailing vessels, about 4s. per day, if the pilot remains on board.

Port Charges.—Consular Fees:—Entrance and clearance, 5s.

Ballast:—Stone, about 15s. for a boat load of about 2½ to 3 tons. **Labour:**—3s. to 5s. per day, according to the class of work.

PRAYA.

Praya is on the N.E. side of the island of Graciosa.

Accommodation.—The shores of the bay are low and sandy. This port may be easily known by an islet lying abreast of the town, about a mile distant. Midway between the town and this islet there is good anchorage in 8 to 12 fathoms.

Provisions and water can be obtained at reasonable prices.

Expenses of loading or discharging cargo, including Custom House fees, about 4 or 5 dols., in addition to 6d. per cubic metre measurement of vessel.

TERCEIRA ISLAND.

Terceira Island is in lat. 38°45' N., long. 27°15' W.

Population.—45,000.

Imports.—Manufactured goods, cottons, woollens, silks, haberdashery, hardware, iron, paper, drugs, oils, paints, coffee, sugar, tea, rice, salt, soap, tobacco, wine, spirits, lumber, etc.

Exports.—Wheat, maize, lemons, cattle, butter, etc.

Accommodation.—Angra Bay is on the S. side of Terceira. It is open to all winds from S.S.W. by the S. to the E. Vessels may safely remain in the roads in June, July, August, and September, when the winds are light and prevail from between W. and N.W., but in the winter the winds from the offing rage so violently that upon the least appearance of bad weather vessels must put off to sea, the coast affording no shelter. The depth of water in the bay varies from 7 to 30 fathoms. Merchant vessels anchor in from 7 to 15 fathoms, moored head and stern.

Custom House officers are kept on board until the vessel is searched, the charge for same being paid by the vessel. No one is allowed to go on board until this search is made, except by permission of the Custom House.

Masters must produce a bill of health and Customs clearance from their port of departure. Lacking a bill of health, they are subject to a quarantine of 3 to 5 days' observation, and a penalty of about £2 18s. if without a Custom House clearance. Masters must report at the Custom House within 24 hours after arrival. A list of stores is required at the Custom House, and if any excess is observable the Custom House takes charge of the same until the vessel's departure. Tobacco for ship's use is always deposited at the Custom House until the day of the ship's departure; should a small quantity

Portugal—Terceira Is and (*continued*).

be required for the use of the crew, it is granted on the master's application.

Quarantine regulations are the same as at St. Michael.

Ballast is not allowed to be thrown overboard ; it must be taken from the ship in lighters.

Port Charges.—Tonnage Dues :—Vessels loaded with coal, 100 reis per ton ; if loaded with other cargo, 250 reis per ton. **Labour :—**Discharging, 2s. 6d. per man per day. **Ballast :—**Stone, 1s. 6d. per ton alongside ; sand, 1s. 2d. per ton. **Water :—**2s. 2d. per pipe. Beef, 8 $\frac{3}{4}$ d. per kilo. Vessels with cargo have to maintain two Custom House officers on board at a cost of 3s. per day ; vessels in ballast have only one officer. **Mooring :—**12s. 6d. (half this sum if the vessel is keeping under way). **Discharging Ballast :—**1s. 1d. per ton. **Boat Hire :—**2,400 reis per day. **Bill of Health** (Portuguese), 1,000 reis.

ROUMANIA.

Roumania, one of the lower Danubian States, has an area of 50,720 square miles and a population estimated at 6,585,534. The government is a limited monarchy, the King being assisted by an Executive Council and an elected Senate and Chamber of Deputies.

Commerce.—The trade of Roumania, which is controlled by a high protective policy, is of a total value of a little over thirty-five million pounds sterling—imports, sixteen millions; exports, nineteen millions. A treaty of commerce and navigation between Great Britain and Roumania was signed at Bucharest on October 31, 1905. This provides for the “most favoured nation” treatment being accorded to the trade and shipping of the high contracting parties. Similar treaties have been made with other countries.

Mercantile Marine.—According to the last available return the commercial navy of Roumania consists of 466 vessels, having a total tonnage of 136,226, this embracing 84 steamers of 20,527 tons and 382 sailing vessels of 115,699 tons. A mail steamship service from Constantza to Constantinople and Alexandria is managed by the Ministry of Public Works, but so far (1908) without profit.

Internal Communications.—The means of transit are being rapidly developed by four main railway lines having a total length of over 2,200 miles. These all radiate from the capital, Bucharest, two into Austria-Hungary, one into Russia, and one into Bulgaria. In addition the following lines are (1908) under construction: Ploesti-Slobozia ($43\frac{1}{2}$ miles) following the route of the proposed pipe line from the oilfields to Constantza Giurgiu-Blegesti ($34\frac{1}{2}$ miles), Bucharest-Oltenita (42 miles), Bacau-Moinesa (19 miles), Tirgu Frumos-Hârlau (25 miles). All these lines are being constructed and will be worked by the State. A private line from Nehoiasi-Varlam ($10\frac{5}{8}$ miles) is under construction by a lumber company.

The navigation of the Danube is conducted under the control of an International Commission with headquarters at Galatz; and whose work is more particularly referred to under the heading “Danube River,” on p. 450.

There are 1,806,580 miles of national roads within Roumania, the State also being responsible for an efficient post, telegraph, and telephone service.

Currency, Weights and Measures.—Roumania adopted the decimal system in 1876, the unit of the monetary system being the leu, equivalent to a franc. The rate of exchange varies, however; during 1907 the highest for cheques on London was 25 lei 89 bani, and the lowest 25 lei 22 bani; the average for the year being 25 lei 39 bani=£1. During the same period the maximum for three months’ drafts on London was 25 lei 50 bani, and the minimum 24 lei 95 bani; average for the year, 25 lei 11 bani. The gold coins are 20, 10, and 5 lei pieces. Silver is legal tender up to 50 lei only. There are nickel coins consisting of 5, 10 and 20 bani (centime) pieces. Bank notes are issued by the National Bank of Roumania. The

Roumania.

weights and measures in general use are those of the metric system, but those in vogue in Turkey are occasionally met with.

Emigration.—Owing to the fact that the majority of emigrants from this country proceed by rail to German ports of embarkation, there are no regulations to which shipowners must conform before taking emigrants from Roumanian ports.

Neither are there any regulations prohibiting the immigration into this country of undesirable persons. Anybody arriving at the frontiers with a passport in order is allowed to enter the country. Exception, however, is made in the case of persons who have once been expelled from Roumania, as such persons cannot re-enter without the special permission of the Government.

DANUBE RIVER.

The navigation of the river Danube is under the control of an International Commission, created by the Treaty of Paris in 1856, after the Crimean War, and whose powers were increased by the Treaty of Berlin in 1878. This body, named the European Commission of the Danube, commonly referred to as the E.C.D., sits at Galatz, and consists of eight delegates, one being nominated by each of the following powers : Austria-Hungary, France, Germany, Great Britain, Italy, Roumania, Russia, and Turkey. It is supported by an income of £80,000 per annum, entirely derived from dues on shipping leaving the river. Under the direction of the Commission the river below Braila and along the Sulina branch has been deepened and the main channel straightened in many places, while by canalization the distance to be navigated has been considerably reduced. The banks caused by the sand brought down by the rapid waters of the Sereth and Pruth have been removed, and kept from re-forming by active dredging operations, so that there is now never less than $18\frac{1}{2}$ ft. at all seasons as high up as Braila.

Danube grain charters are made on the " 1890 Danube form " of charter party.

Regulations.—The following are extracted from the Regulations issued by the European Commission of the Danube in 1889, and which are still in force :—

The navigation of the Lower Danube below Galatz is placed under the control of the inspector of the navigation of the Lower Danube and of the captain of the port of Sulina. The authority of these two agents is exercised towards all flags alike, without distinction.

The Sulina roadstead comprises the waters of the sea for a radius of 2 nautical miles from the head of the north pier.

Every vessel arriving in the Sulina roads from seaward must hoist her national colours.

Boats belonging to vessels anchored in the roads may not cross the bar, or ply in port during the night, without carrying a lighted lantern.

The port of Sulina comprises the Sulina branch for a space of 3 nautical miles up the river, starting from the opening of the channel formed by the heads of the piers at the mouth.

No sailing or steam-vessels of more than 100 tons register may cross the bar of Sulina, either entering from the sea or leaving the river, without having on board a pilot licensed by the Commission. This clause, however, does not apply to steamers making periodical voyages, who are allowed to employ

Roumania—Danube River (*continued*).

their own pilots. Vessels of not more than 150 tons register, crossing the Sulina mouth in ballast, are also exempted from the obligation of taking a licensed pilot.

If, owing to stormy weather, the Sulina bar is considered impracticable by the captain of the port, a blue flag is hoisted on the tower of the lighthouse to show that the pilots are unable to go out to vessels in the roadstead.

Captains must, within 24 hours of their arrival, present themselves at the office of the captain of the port, and there produce their ship's papers.

The captain of every vessel arriving in the port of Sulina with a cargo consisting wholly or partially of petroleum, gunpowder, mining-powder, or other explosive material, must immediately make a declaration to this effect to the "Bossman" or pilot, before anchoring.

Anchors, chains, and other articles abandoned in the port and roadstead of Sulina may not be removed unless the authorization of the captain of the port has been obtained.

As a general rule, vessels are forbidden to pass one another if going in the same direction, and two vessels sailing in opposite directions may not cross in places where the channel does not afford sufficient breadth.

When two steam vessels proceeding in different directions are approaching a curve in the river, they must give the signals prescribed by Articles 36 and 37, and the ascending vessel must stop until the other has cleared the passage. The same rule applies to the case of a steamer and a sailing vessel meeting one another.

Vessels are strictly forbidden to throw their ballast overboard into the river or in the roadstead of Sulina. They are in like manner forbidden to discharge ballast into those parts of the sea in the neighbourhood of the roadstead where there is less than 10 fathoms of water. The landing of ballast above the port of Sulina can only be carried out at points of the river bank selected by the inspector of the navigation, and described in public notices. The captain of the port of Sulina selects the places where ballast can be discharged in the port.

Every vessel lying at Toultecha must be moored to the right bank of the river; there shall, however, never be more than three vessels moored abreast.

No vessel may drop anchor in the navigable channel of Toultecha, that is to say, on the right of the bollards and red buoys fixed along the left bank of the river, nor between the posts on the right bank bearing the sign of an anchor reversed.

Pilotage at the river's mouth being compulsory, a special corps of licensed and responsible pilots is employed at Sulina, under the direction of a chief pilot and of the captain of the port.

As soon as a pilot boards a vessel, he must acquaint her captain with the depth of water over the bar channel, and, on the other hand, the latter must inform the pilot of the draught of water of his vessel, and the proportion of cargo which he has on board. This proportion is made known without delay by the pilot to the captain of the port.

The pilotage dues, as well for entry into the river as for departure, being included in the navigation dues levied at Sulina, local pilots are not allowed to receive any remuneration from the captains whose vessels they have piloted.

The voyage up the river commences from the time the vessel leaves the port of Sulina to ascend the river, and terminates with the arrival of the

Roumania—Danube River (continued).

vessel either at its port of destination, or at Braila when she is bound for a port above this latter, or for Matchin. The voyage down the river commences at Braila, or on leaving the port where the vessel has taken her cargo, or clearance if she goes down empty, in the event of this port being situated below Braila. It terminates when the vessel comes to anchor in the port of Sulina. Vessels leaving Matchin, Podbachi, or a port above Braila, must take their pilots when passing Braila; those sailing from the ports of Reni or Ismail have the option of providing themselves with a pilot when passing Toultscha. Captains may call for the services of a pilot should they require assistance when their vessel shifts her berth in the port of loading or discharge.

Navigation Dues.—Every sailing or steam vessel, and every transport without exception which enters the port of Sulina in ballast, and leaves that port also in ballast, shall pay a due of sixteen (16) centimes only per register ton.

The following vessels pay no dues :—(1) War vessels. (2) Vessels exempted on account of their small tonnage. (3) Tugboats, when they are not employed as lighters.

Vessels loading or unloading goods at Sulina, or up river, pay for each register ton the following dues :—

Tonnage of the vessel.	Vessels loading exclusively at Sulina.		Up river.	
	Fr.	c.	Fr.	c.
From 201 to 400	0	55	1	10
„ 401 „ 600	0	75	1	30
„ 601 „ 800	1	10	1	70
„ 801 „ 1,000	1	20	1	80
Upwards of 1,000	1	25	1	90

Mail boats which carry on a regular periodical passenger service will be allowed a reduction of 60 per cent. on the above dues.

Every vessel, whether a sailing vessel or a steamer, with the exception of the passenger and mail boats mentioned in the preceding paragraph shall pay in respect of her first voyage to the Danube in each year the full amount of the dues applicable to her case under the terms of the present tariff. For each of the following voyages which she makes during the same year she will pay only 80 per cent. of the full dues.

Vessels loading in the roads at Sulina shall pay a fixed due of 100 francs, and the lighters which bring them their cargo, and which are not exempted on account of their small tonnage, shall pay 55 centimes per register ton.

Every vessel which enters at Sulina, and does not leave within twelve months, is liable to the full dues provided for in the two first paragraphs of these dues. The joint and several guarantee of an unquestionably solvent inhabitant of Sulina may be substituted for the deposit of these dues.

The dues laid down in the preceding Articles include the dues imposed on vessels to cover the expenses of works and other improvements effected by the European Commission; the dues now in force for the maintenance of the lighthouses forming the system of lights for the mouths of the Danube; the dues destined to cover the expenses occasioned by the pilotage service at the Sulina mouth, as well as in the river between Sulina and Braila; and those of the other establishments instituted with the view of facilitating the navigation. Beyond these dues, vessels are liable to no other due or claim whatever. Companies who avail themselves of the permission to have their vessels piloted by their own pilots will be allowed a reduction of 20

Roumania—Danube River (*continued*).

per cent. on the navigation dues, payable by such of their vessels as ascend the river. This reduction will be made at the time the monthly accounts are settled.

The navigation dues levied under the present tariff are calculated on the net tonnage of the vessel, as shown by the system of measurement adopted by the European Commission of the Danube. The unit of tonnage measurement adopted by the European Commission is a capacity of 100 English cubic ft., equal to 2·83 cubic metres. The tonnage of vessels is derived from the ship's papers, but captains whose vessels have been measured by the Tonnage Department of the captain of the port's office, at Sulina, according to the rule applicable to empty vessels, are allowed to pay their dues on the footing of the tonnage shown in the certificate of measurement delivered by the captain of the port.

Pilotage.—Pilotage is compulsory, both on entering and leaving the Sulina mouth, for all laden vessels of more than 100 tons register. It is optional for vessels of not more than 150 tons register which cross the entry in ballast. This pilotage is done by the pilots of the port of Sulina,¹ and they are obliged to go a mile to seaward of the head of the North Pier to meet vessels coming in. Vessels must wait for them, and slacken speed or cast anchor if necessary. A boat is kept ready to put pilots on board of vessels coming in from seaward during the day, as soon as the look-out in the lighthouse signals the approach; and by night, when the vessels themselves make the usual signal for a local pilot.

When, in bad weather, the Sulina entrance is considered unsafe for pilot boats, a blue flag is hoisted on the tower of the lighthouse on the right bank. In this case, if the vessel cannot remain in the roads in consequence of the state of the sea, or from other circumstances over which the captain has no control, he may come into port without a pilot, on his own responsibility.

Pilotage and lighthouse dues are included in the navigation dues levied by the Commission on the departure of a vessel. Vessels which pay no navigation dues and take a pilot, whether voluntarily or in accordance with the terms of the regulations, are charged 15 francs a day in the case of a steamer, and 10 francs a day in the case of a sailing vessel, for the time the pilot remains on board.

In any case captains of vessels entering the river must, after having complied with the sanitary formalities, present themselves at the Navigation Cash Office and obtain a visé to their muster-roll; failure to comply with this formality entails a heavy fine.

Vessels are allowed to load a full cargo in port and lighten again to enable them to cross the bar.

Steamers proceeding up river must be provided with auxiliary rudders made of iron, the lower extremity of which must be 3 ft. below the water line; vessels with exceptionally wide rudders are exempted from this provision after examination by the harbour authorities.

¹ This provision does not apply, however, to steamers making periodical voyages, which are allowed to have their own pilots.

BRAILA, OR IBRAILA.

Braila, or Ibraila, in lat. 45°17' N., long. 27°57' E., is about 93 miles from Sulina, and 11 miles above Galatz.

Roumania—Braila, or Ibraila (*continued*).**Population.**—61,542.**Imports.**—Coal, rice (uncleaned), and general merchandise.**Exports.**—Grain in large quantities, wood, petroleum, flour, cement, bran, and rice.

Accommodation.—There is from 18 to 23 ft. of water over the shallows, and steamers ascending and descending the river must draw at least 1 ft. less. Steamers of 5,500 tons and over can come up the river as far as Braila. A quay has just been completed, accommodating eight steamers which are moored alongside Government pontoons over which the loading is effected. If the number of steamers in port exceeds that of the berths available, the excess tonnage is moored alongside the other steamers, and the loading is thus effected over one another's decks. In case of need, they sometimes berth three deep. There is a dock capable of accommodating sixteen steamers, but only two steamers can load at the elevators simultaneously. There is from 18 to 22 ft. of water in the docks, and 25 to 30 ft. in the harbour; depth alongside the quay, 22 ft. The total length of quayside in the dock is 1,830 ft. and in the river 5,135 ft. There is a warehouse, of 25,000 tons capacity, for storing grain alongside the dock, also a bonded warehouse divided into five parts, each with a hydraulic crane. There is a 10 ton fixed hand crane on the dock quay, a floating 50 ton steam crane, and two shifting $1\frac{1}{2}$ ton steam cranes on the dock. There are also six floating grain elevators, and others are being constructed.

Pilotage.—Both river and dock pilotage are compulsory. The former is paid in the European Commission of the Danube dues; the latter is 4 c. per ton for steamers of 1,000 tons net reg. and upwards. **Towage:**—No tugs are required for mooring in port, except in rough weather, when their assistance is needed for swinging steamers round, or enabling them to enter or leave the dock. Cost, about £5.

Port Charges.—Consular fees, 12s. 6d. **Quay or Dock Dues:**—No harbour dues or charges, but quay dues (or, if in dock, dock dues), 20 c. per net reg. ton for every cargo discharged or loaded. It is paid by thirds, viz.: One-third if less than one-third of the cargo is loaded or discharged; two-thirds if less than two-thirds of the cargo is loaded or discharged; full dues if two-thirds or full cargo is loaded or discharged. Vessels loading or discharging in more than one river Danube (Roumanian) port only pay full quay, or dock, dues once for inward or outward full cargo.

Boat Hire:—About 5s. to 10s. per day. **Stevedoring:**—Discharging general cargo, 8d. per ton; coal, 10d. per ton; including baskets and stages. £1 per 200 units trimming steamers, whether single or double decked. **Labour:**—7 fr. per labourer per day. **Levelling Grain:**—Each levelling costs £1.

Lighterage:—Including towage down to Sulina, and re-loading into the vessel at that port, £35 per 200 units, with a minimum of 300 units. **Ballast:**—Free, ship paying the loading expenses.

Pro Forma Charges on a steamer of 1,500 tons register, coming from England with 1,000 tons of general cargo, and bound for a foreign port fully loaded:—

	£	s.	d.
Entering and clearing, berth facilities	1	10	0
Customs manifest, etc.	2	5	0
British Consular fees, endorsement of papers, and bill of health	0	12	6
Roumanian bill of health	0	9	7

Carried forward **£4 17 1**

Roumania—Braila, or Ibraila (continued).

	£.	s.	d.
Brought forward	4	17	1
Carriage and boat hire	0	15	0
Charter party stamps	0	8	0
Discharging 1,000 tons cargo at 8 <i>d.</i> per ton	33	6	8
Stages for loading and discharging	4	0	0
Trimming cargo 3,300 units, at £1 per 200 units	16	10	0
Levelling grain, one parcel	1	0	0
Telegrams and petties	2	10	0
Inward agency fee	5	5	0
Outward agency fee, including Sulina	10	10	0
2½ per cent. commission on 3,300 tons at 10 <i>s.</i>	41	5	0
Dock dues, 200 fr.; pilotage, inwards, 60 fr.	10	8	0
Quay dues, outwards, 300 fr.	12	0	0
Cash to captain for Sulina disbursements, including E.C.D. dues, 3,000 fr.	120	0	0
Tally clerks on general cargo, 25 at 6 fr. = 150 fr.	6	0	0
	<hr/>		
	£268	14	9

Pro Forma Charges on a steamer loading 7,000 tons grain.—

	Fr.	c.
Expenses, entering and clearing	25	00
Dock pilotage	102	80
British Consular fees	3	20
Berth facilities	30	00
Manifest, stamps on bill of lading, and declaration	25	00
Cab hire and petty expenses	25	00
Mooring and unmooring	40	00
Postages, telegrams, and telephone	95	00
Agency fee, £10 10 <i>s.</i> at 25 fr.	262	50
Trimming 13,678 qrs. at 25 <i>s.</i> per 1,000 qrs.	427	35
Levellings, 15 at 20 <i>s.</i>	375	00
Stages, 2 at 75 fr.	150	00

1,560 85 = £61 17*s.* 11*d.*

CONSTANTZA.

Constantza, or Kustendjeh, is in lat. 44°10' N., long. 28°39' E., and is the terminus of the railway from Cernavoda.

Population.—About 15,000.

Imports.—Manufactures of all kinds, coal, colonial produce, and dried provisions.

Exports.—Wheat, barley, millet, rape seed, maize, wool, petroleum, and timber.

Accommodation.—The harbour is formed by a breakwater, 4,518 ft. long, on the N., and by a jetty 4,933 ft. long, on the S. The entrance is 524 ft. wide, and the length of quayside is 6,470 ft., with 26 ft. alongside. There is 26 ft. of water on the bar. The quayside provides berthage for eighteen steamers; fifteen for general shipping and three for the Roumanian and other mail boats. Two berths are provided for petroleum steamers, which load from pipe-lines inside the S. jetty. A basin for such vessels is under construction. A large grain silo, which will have two loading berths, is under construction.

Pilotage.—Free. The pilots are maintained by the Government.

Port Charges.—**Bill of Health**, and other port charges, about 15*s.*

Sanitary Dues:—7 c. per ton reg. **Trimming**:—Grain cargoes, ½*d.* per quarter.

Discharging:—Coal cargoes, 10*d.* per ton. **Provisions**:—Cheap. Beef, 4*d.* to 5*d.* per lb.

Roumania.

GALATZ.

Galatz, in Moldavia, is in lat. 45°27' N., long. 28°2' E., about 82 miles from the mouth of the Danube. It is the principal shipping port in the province.

Population.—About 70,000.

Imports.—British manufactures, sugar, raisins, figs, oil, coal, iron, phosphate, and Manchester goods.

Exports.—Corn, wool, hides, maize, rye, linseed, cattle, and wood.

Accommodation.—Vessels anchor in the river, and swing into berth when ready. The basin belonging to the Roumanian Government Railway has a water area of about 20 acres; length of quayage, 1,640 ft.; depth of water at entrance, and also at quayside, varies from 42 ft. 7 in. in May and June, to 15 ft. in October and November. General and coal cargoes are discharged in the basin, but most of the loading is done in the river from lighters, or from the quays. There is a portable crane to lift 1½ tons, and one fixed crane capable of lifting 10 tons; also two elevators to discharge 150 tons of grain per hour each. The Roumanian Government own the quays along the river banks. Steamers are boomed off into deep water, and stages are rigged between them and the quays. The old quay is 1,324 ft. long, and the new quay 1,336 ft. long. Vessels drawing 24 ft. can reach the quays. There is a crane to lift about 15 tons.

There are two floating docks to raise vessels of 2,100 and 350 tons respectively. The large dock can be divided into two equal sections, each section having a lifting power of 1,200 tons. The docks have the following dimensions.

Large dock is 262 ft. long, 55 ft. wide at the entrance, and 18 ft. on the blocks.

Small dock is 147 ft. long, and 49 ft. wide at the entrance.

The length given is over all; width is at the high water ordinary springs level and the depth on the blocks is at high springs.

Coal dépôts exist, but steamers invariably bunker at Sulina to avoid risk of lighterage.

Dock or Quay Dues.—When the basin or quay is used, 20 c. both per net reg. ton.

Tariff of the Galatz docks for dry docking of vessels in the floating docks :—

Gross Register Tons.	Taxes.		Gross Register Tons.	Taxes.		Gross Register Tons.	Taxes.	
	Enter- ing and Clearing.	Dry Docking per Day.		Enter- ing and Clearing.	Dry Docking per Day.		Enter- ing and Clearing.	Dry Docking per Day.
	Fr.	Fr.		Fr.	Fr.		Fr.	Fr.
50- 99	200	100	600- 699	400	250	1,600-1,699	565	350
100-149	220	115	700- 799	420	260	1,700-1,799	580	360
150-199	240	130	800- 899	440	270	1,800-1,899	595	370
200-249	260	145	900- 999	460	280	1,900-1,999	610	380
250-299	280	160	1,000-1,099	475	290	2,000-2,099	620	390
300-349	300	175	1,100-1,199	490	300	2,100-2,199	630	400
350-399	320	190	1,200-1,299	505	310	2,200-2,299	640	410
400-449	340	205	1,300-1,399	520	320	2,300-2,399	650	420
450-499	360	220	1,400-1,499	535	330	10 per cent. will be charged for every 100 tons above last tonnage.		
500-599	380	235	1,500-1,599	550	340			

Roumania—Galatz (continued).

When only one section of the large floating dock is used, entering and clearing is reduced by 25 per cent., and the dry docking by 50 per cent. Tugs under 100 tons, and lighters of any size, pay half of the dry docking charges. When several vessels are docked at the same time a reduction of 30 per cent. is allowed.

Pilotage.—Dock Pilotage:—When steamers go into dock the charge is as follows: Up to 200 tons net reg., $1\frac{1}{2}$ c. per reg. ton; over 200 and up to 400, 2 c.; over 400 and up to 600, $2\frac{1}{2}$ c.; over 600 and up to 800, 3 c.; over 800 and up to 1,000, $3\frac{1}{2}$ c.; over 1,000, 4 c.

Port Charges.—Loading:—Grain, 25 c. per 1,000 quarters.
Lighterage:—£30 to £50 per 1,000 quarters, according to the season of the year, and the demand for lighters.

Pro Forma Charges on a steamer of 2,563 reg. tons, 7,000 tons d.w., loading part cargo of grain:—

	Fr.	c.
Entering and clearing	25	00
British Consular fees, 2s. 6d.	3	20
Belgian	6	00
Roumanian bill of health	10	00
Quay dues on 2,563 reg. tons at 20 c. per reg. ton	512	60
Dock pilotage at 4 c. per reg. ton	102	50
Mooring and unmooring	40	00
Custom House dues	35	00
Manifest and bill of lading stamps.	18	00
Berth facilities	30	00
Cab hire and petty expenses	25	00
Trimming 11,800 quarters at 25s. per 1,000 quarters, £14 15s. 0d.	368	75
Levelling grain at £1 per separation, £7	175	00
Stages, two at 75 fr.	150	00
Postages, telegrams, etc.	30	00

1,531 05 = £60 14s. 11d.

P.S.—No lighterage was required, as the vessel completed loading at Sulina.

There is a rebate of 20 per cent. on the commission dues for succeeding voyages made in the same year after the first voyage.

GIURGIU.

(See **Oltenita and Giurgiu**, p. 456.)

IBRAILA.

(See **Braila**, p. 451.)

ISMAIL.

Ismail, in lat. $45^{\circ}19'$ N., long. $28^{\circ}51'$ E., is about 64 miles from Sulina, on the Kilia branch.

Population.—34,000.

Exports.—Grain, hides, and tallow.

Ismail, Kilia, and Vilcov are Russian ports on the Danube. To load at these ports it is necessary to go up the Sulina branch and descend the Kilia branch. Kilia is 87 miles and Vilcov 97 miles from Sulina. Ismail is a free port—tobacco, arms, and munitions of war excepted.

Roumania.**MACHIN.**

Machin, or Matsin, in lat. $45^{\circ}14'$ N., long. $28^{\circ}8'$ E., is situated about 6 miles up a tributary of the Danube, which enters the main river opposite Braila. Sea-going vessels do not load there, and vessels cannot be sent there to load under the usual Danube charter.

OLTENITA AND GIURGIU.

These ports are no longer visited by sea-going vessels, only an occasional Turkish lugger with a cargo of stones, sand, or timber going there. Trade is carried on in flat-bottomed lighters. **Charges:**—Same as at Braila and Galatz.

SULINA.

Sulina, in lat. $45^{\circ}7'$ N., long. $29^{\circ}41'$ E., is situated at the mouth of the Sulina branch of the river Danube. Distance by sea from Liverpool, 3,270 miles.

Population.—5,000.

Imports.—Coal, paint, jute bags, petroleum, ship-chandlers' stores, and Manchester goods.

Exports.—Wheat, barley, rye, millet, rape seed, Indian corn flour, and maize.

Accommodation.—The depth of water is about 24 ft. The depth of water on the bar varies, but it is shown in figures on the old lighthouse, visible from the bar by telescope. The quays run along both banks of the river and are $1\frac{1}{2}$ miles long. Vessels load and discharge alongside the quays or by lighters. There are about thirty floating grain elevators, by means of which loading can be accomplished much more quickly than by manual labour. Two of these elevators are worked on the vacuum system, in the others the bucket system is employed. Eight are capable of lifting from 40 to 100 tons per hour, and the more recently introduced elevators are calculated to lift from 80 to 140 tons per hour. All are fitted with automatic weighing machines. There are coal elevators also.

Pilotage.—Compulsory at the entrance, and also for vessels proceeding up the river. The pilotage dues are included in the port charges levied by the European Commission of the Danube.

Port Charges.—Port dues for entry as well as departure from the river are comprised in the port charges levied by the European Commission of the Danube. **Loading and Discharging:**—Grain, 40s. per 1,000 quarters, for loading and trimming.

Ships which load or discharge goods at Sulina or at an up-river port pay the following tax on each ton register.

For ships loading :—

Tons register.	Exclusively at Sulina.		At an Up-river Port.	
	Fr.	c.	Fr.	c.
200 to 600	0	30	0	55
601 „ 1,000	0	60	1	10
1,001 „ 1,500	0	90	1	40
Above 1,500	1	10	1	70

Roumania—Sulina (*continued*).

The reduction of the taxes in the case of vessels visiting the Danube a second time in the course of one year has been increased from 15 per cent. to 20 per cent.

Sulina is a free port. The Roumanian States monopolies are : Tobacco, salt, matches, gunpowder. Goods by land to Sulina are liable to the ordinary duties.

Custom House :—Vessels loading or discharging at Sulina are visited by the Custom House officials, to verify the ship's manifest. A search is a rare occurrence, but strict accuracy is necessary in the particulars submitted.

Brokerage :—Entrance and clearance, £5 5s. **Coal** is obtainable in large or small quantities at the rate of 30s. per ton f.o.b. for best Welsh.

Quarantine.—All vessels entering from the sea are boarded by the sanitary officials, and must produce their bills of health before pratique is granted. Vessels descending the river are not subjected to a visit from the sanitary officials, but must deposit bills of health at the health office.

Pro Forma Charges on a steamer of 2,343·34 tons net reg., 7,000 tons d.w., loading at Sulina :—

	Fr.	c.
European Commission dues at 1 fr. 70 c.	3,983	44
Sanitary dues at 7 c.	205	03
Custom House forms, stamps on bill of lading	7	50
Trimming, 5,830 qrs. at 50s. per 1,000 qrs.	364	35
Levellings, three at 20s.	75	00
Cab and boat hires	28	00
Consular fees	3	20
Greek bill of health	12	20
Watchman, 3 nights at 5 fr.	15	00
Boat attending ship	15	00
Telegrams, petties, and cab hire	29	55
Mooring and unmooring up and down	30	00
Boom	15	00
Boat assisting to ship	10	00

4,793 27 = £190 3s. 8d.

NOTE.—The river and bar pilotage is included in the European Commission dues.

TOULTCHA.

Toultcha, in lat. 45°8' N., long. 28°49' E., is about 49 miles above Sulina, and about 44 below Galatz.

Population.—22,000.

Accommodation.—There is sufficient water for any vessel that can reach Galatz. Very long stages have to be rigged up between the ship and the shore.

RUSSIA.

The Russian Empire is divided into six great territorial divisions, i.e., European Russia, Poland, Caucasus, Siberia, Central Asian Provinces, and Finland. It has an area of 8,647,657 square miles and a population of about 151,800,000.

Commerce.—The commerce of the Empire is administered by the Minister of Commerce and Industry. The return of exports and imports during 1907 may be summarised as under :—

Description.	Exports in 1,000's of Roubles.	Imports in 1,000's of Roubles.
Articles of food	559,745	118,890
Raw and half-manufactured articles	383,342	375,776
Animals	22,731	1,054
Manufactured goods	26,195	200,508
	992,013	696,228
9·46 rbls. =£1	£104,863,953	£73,597,040

Mercantile Marine.—The mercantile marine of Russia on June 30, 1907, consisted of 474,000 tons steam, and 609,000 tons sail, or a total of 1,083,000 tons.

Internal Communications.—The railways open for traffic on December 31, 1907, in European and Asiatic Russia were of a total length of 41,371 miles. Of these 28,029 miles belong to and are worked by the State, and 13,342 miles by companies. The length of line open for temporary traffic on the same date extended over 229 miles, of those building 1,111 miles, and of those for which permission to build had been granted 1,321 miles. In the total network of Russian railways as given above are not included the length of lines in the Grand Duchy of Finland, extending over 2,069 miles, and the Eastern China Railway, extending over 1,071 miles. Russia (exclusive of Finland) also possesses 151,569 miles of rivers, canals, and lakes. Of these 37,624 are available for navigation by steamers, 16,887 by small sailing ships, and 53,581 by rafts. Nature has provided Finland with a remarkable number of lakes, which the authorities have connected with each other and with the Gulf of Finland by a system of canals. In Finland also 1,891 miles of railway out of a total of 2,062 belong to the State, the small remaining portion of 171 miles being the property of a public company.

Currency, Weights and Measures.—The currency is based upon a gold standard, the gold coins being the imperial = 15 roubles, and half imperial. The unit of money is the silver rouble of 100 copecks = 2s. 1·6d. In official calculations 9·46 roubles = £1.

Russia.

WEIGHTS.

32 loths	=	1 funt	=	14½ oz. avoirdupois.
40 funts	=	1 pood	=	36 lb. 1 oz. avoirdupois.
10 poods	=	1 berkovitz	=	3 cwt. 0 qr. 25½ lb.
*63 „ (nearly)	=	1 ton.		
3·15 „	=	1 cwt.		
1 Russian bale of wool	=	3½ to 4 cwt.		
1 chetwert wheat, weighing	10 poods	=	0·72 quarters.	
1 „ rye	9 „	=	„ „	
1 „ linseed	9 „	=	„ „	
1 „ rape seed	8½ „	=	„ „	
1 „ barley	7 „	=	„ „	
1 „ oats	6 „	=	„ „	

RUSSIAN CHETWERTS.

RUSSIAN CHETWERTS REDUCED TO IMPERIAL QUARTERS.				IMPERIAL QUARTERS REDUCED TO RUSSIAN CHETWERTS.			
Chet.	Qrs.	Chet.	Qrs.	Qrs.	Chet.	Qrs.	Chet.
1	0·72	80	57·72	1	1·39	80	110·85
2	1·44	90	64·94	2	2·77	90	124·70
3	2·16	100	72·15	3	4·16	100	138·56
4	2·89	200	144·31	4	5·54	200	277·12
5	3·61	300	216·46	5	6·93	300	415·68
6	4·33	400	288·62	6	8·31	400	554·24
7	5·05	500	360·77	7	9·70	500	692·80
8	5·77	600	432·92	8	11·08	600	831·36
9	6·49	700	505·08	9	12·47	700	969·92
10	7·22	800	577·23	10	13·86	800	1,108·48
20	14·43	900	649·39	20	27·71	900	1,247·04
30	21·65	1,000	721·54	30	41·57	1,000	1,385·60
40	28·86	2,000	1,443·08	40	55·42	2,000	2,771·20
50	36·08	3,000	2,164·62	50	69·28	3,000	4,156·80
60	43·29	4,000	2,886·16	60	83·14	4,000	5,542·40
70	50·51	5,000	3,607·70	70	96·99	5,000	6,928·00

LIQUIDS.

100 charkeys	=	1 vedro	=	2·704 imperial gallons.
18 vedros	=	1 hogshead.		
40 „	=	1 sorokowaja	=	108·196 imperial gallons.

DRY GOODS.

4 chetwerkas	=	1 chetwerik	=	0·7213 bushels.
2 chetweriks	=	1 pajak	=	1·4426 „
2 pajaks	=	1 osmin	=	2·8852 „
2 osmins	=	1 chetwert	=	5·7704 „
16 chetwerts	=	1 last	=	11·5468 imperial quarters.
100 „	=	70 imperial quarters.		
1 St. Petersburg standard of deals	=	165 cubic feet, or 3⅓ loads.		

(Generally calculated as three loads.)

3 loads of lathwood measure about 1 fathom 4 ft. in length, and 6 ft. by 6 ft.

* At St. Petersburg, in fixing freight to England, a ton is 63 poods of hemp, flax, tallow, iron, copper and ashes, all heavy goods; 44 poods of bristles, isinglass, leather, and wax; 5 dozen of deals; 3,500 hare skins.

Lastage and Tonnage Dues.—Ten copecks per net reg. ton in, and ten copecks out, on all foreign vessels every time they enter or leave a Russian port. In the case of ships under foreign flags, belonging to countries with which there is no Commercial or Maritime Treaty, the ship dues are to be levied at the rate of two roubles per net reg. ton. If the ship dues imposed at the ports of the above indicated countries on Russian vessels should exceed two roubles per net reg. ton, then the Minister of Finance has the right to increase the ship dues accordingly on vessels belonging to such countries when visiting Russian ports.

Russia.

Vessels under the Russian flag trading between Russian ports situated in different seas, also having regular communication between Russian and foreign ports, shall pay dues only once during the navigation season. The payment is to be effected in the first port visited by the vessel in each year.

The following vessels are exempt from paying ship dues : *a.*—Men-of-War also Government vessels. *b.*—Vessels destined exclusively for laying submarine telegraph cables and keeping same in order. *c.*—Russian vessels trading between Russian ports situated in the same sea, also those arriving at seaports from inland waters. *d.*—Russian vessels whose net reg. tonnage is less than 20 tons. *e.*—Mercantile vessels calling at ports for non-commercial purposes. *f.*—Ships belonging to Russian Yacht Clubs. *g.*—Vessels trading in the Caspian Sea. *h.*—Fishing and hunting vessels belonging to the inhabitants of the Archangel Government.

Pood Dues.—Pood dues are levied on all goods arriving at or leaving the following ports by sea : Azof, Akkermann, Anapa, Archangel, Batum, Berdiansk, Nicolaieff, Windau, Vladivostock, Ghenitch, Eupatoria, Yeisk, Kertch, Kilva, Krasnovodsk, Libau, Mariupol, Narva, Nahitchewan, Novorossisk, Odessa, Pernau, Poti, Reval, Reni, Riga, Rostov-on-Don, St. Petersburg, Sevastopol, Suchum, Taganrog, Temruik, Kherson, Yalta, Theodosia, and Taman. These dues are levied at the following rates :—

a.—One quarter copeck per pood on grain cargoes, hay, straw, manures, clay (except dyeing clay), chalk, lime, gypsum, cement, etc., alabaster, stone (except marble), coal, coke, raw naphtha, naphtha refuse, ores, iron slag, bricks, salt, and wood. *b.*—One half copeck per pood on all kinds of seed, linseed, hemp, tow, cakes, flour, groats, wood goods (except valuable woods), pitch and tar. *c.*—One copeck per pood on all other goods. Goods transported from one Russian port to another pay one-third of the rates stated above. The following cargo is exempt from paying pood dues : *a.*—Cargo transported within the boundaries of the port. *b.*—War materials. *c.*—Coal for naval and war depôts. *d.*—Stones. *e.*—Salt arriving at the Baltic ports from the Black and Azof Seas.

The *dues* are charged on the quantities shown in the cargo documents, without the weight being checked. The Minister of Finance has the right to charge pood dues on goods of small value at the lowest rates, and to levy dues on such goods to the extent of less than one quarter copeck per pood, also to free them altogether from paying pood dues. The ship and pood dues must be paid at the local Customs House, according to the instructions of the Minister of Finance, and the Imperial Controller. If a steamer loads or discharges at more than one Russian port in the same sea viz., Black Sea or Baltic, during the same voyage, she only pays tonnage dues at one port. Should she load in the Black Sea and discharge in the Baltic, or vice versa, then tonnage dues are charged at both places. The rate charged for tonnage dues is the same at every Russian port.

Quarantine Dues.—1 copeck per net reg. ton. Ships loading at two or more Russian ports only pay quarantine dues once, viz., at the first port.

Emigration.—English ships provided with a certificate issued under the provisions of the Merchant Shipping Act of 1894 are allowed to contract for the conveyance of emigrants from Russia.

The authorities, however, insist that each emigrant be granted a space of

Russia.

not less than 72 cubic ft., and that the provisions carried are sufficient to supply to every emigrant food in the same quantities as are issued to the sailors in the Russian Imperial Navy. These rations are based on the following daily scale :—

Fresh or salt meat	$\frac{3}{4}$ funt.
Biscuits or bread	2 funts.
Porridge, of two kinds	$\frac{1}{4}$ funt.
Vegetables (pickled or fresh)	$\frac{1}{2}$ "
Butter	$\frac{1}{2}$ "

together with wine, vinegar, salt, tea, sugar, tobacco, and soap.

Immigration.—Although there are no restrictions, so far as ship owners are concerned, with regard to persons desirous of proceeding to Russia, it is as well that owners and agents should remember that there is a very strict examination of passports, and that any passenger not provided with these will be refused admission and must be conveyed back to the port of embarkation. The Minister of the Interior reserves to himself the right to, at all times, refuse admission to foreign Jews, whether provided with passports or not.

ANAPA.

Anapa is in lat. $44^{\circ}52'$ N., long. $37^{\circ}20'$ E.

Population.—About 5,000.

Exports.—Grain, tallow, butter, peltries, and wax.

Accommodation.—A small breakwater has been built and a pier constructed, but only vessels of small burden can lie alongside the pier. Larger vessels discharge and load in the roadstead about half a mile from the town. The roadstead is exposed to S.W., but in spring, summer, and autumn, is considered safe. Two new lighthouses have been built, which facilitate the entrance to the bay.

ANAKRIA.

Anakria is in lat. $42^{\circ}23'$ N., long. $41^{\circ}33'$ E.

Export.—Indian corn.

Accommodation.—The roadstead is open to all winds from N. round westerly to S. Vessels anchor on a bank, about $1\frac{1}{2}$ miles from shore, with the castle or fort bearing about E.N.E. The depth of water on the bank is from 7 to 10 fathoms, and great care is necessary in anchoring, as it suddenly deepens to 50 and 60 fathoms. There is from $3\frac{1}{2}$ to 4 ft. of water on the bar of the river Ingour, and a very strong current. Vessels must enter and clear at Poti. Cargo is brought off in lighters, carrying about 10 tons. Labour, 1 rbl. per day. Beef can be had. Pigs and fowls are plentiful and cheap. Fresh water can be got from the river by ship's boats.

Pro Forma Charges on a vessel of 380 reg. tons, loading cargo here :—

	S. rbls. cps.
Quarantine dues	2 20
Bill of health	3 20
Lastage, 40 cps. per last	76 00
Custom House	5 00

86 40

Exchange at 9.46 rbls. = £1 = £9 2s. 8d.

*Russia.***ARCHANGEL.**

Archangel, in lat. $64^{\circ}30'$ N., long. $41^{\circ}0'$ E., is situated on the Northern Dvina, about 35 miles from its mouth.

Population.—21,000.

Imports.—Machinery, coal, salt, hardware, bricks, cement, colonial goods, etc.

Exports.—Wheat, oats, rye, linseed, sawn timber, logs, deals, flax, tow, codilla, mats, oil, pitch, train oil, and tar.

Accommodation.—The port authorities allow vessels drawing 19 ft. forward and $19\frac{1}{4}$ ft. aft to cross the bar, there being $20\frac{1}{2}$ ft. mean depth. The channel has a depth of $18\frac{1}{2}$ ft. up to the harbour of Solombola, and to Surkoff's Mills six miles further. The river is frozen for six months, and vessels never get up to the town for three weeks after the breaking up of the ice. Navigation opens the end of May, and closes about the end of October. Masters of vessels are not required to produce bills of lading at the Custom House, the ship's manifest being considered sufficient.

There is a railway connecting Archangel with Moscow, and Perim for Siberia. Customs regulations are very strict, confiscation and fine on everything not at once declared, including ship stores, etc. No shifting in the harbour is allowed without a permit. There are two dry docks: Murman dock, with 378 ft. available docking length at coping level, 52 ft. wide at the entrance, and 15 ft. deep on the sill, situated about a mile up the river on the left bank. The Government dock was constructed in 1902.

Pilotage.—Compulsory; 6 cps. per reg. ton in, and 6 cps. out.

Towage:—48 to 100 roubles from port to sea for ships and steamers.

Port Charges.—Tonnage Dues:—20 cps. per reg. ton; address commission, 55 cps. per reg. ton. Sailing vessels discharging solid ballast, 43 cps. per ton. Ships can clear inwardly, when without cargo, at Chicowka, a Custom House station lying near the mouth of the river, before reaching the saw mills when entering; otherwise they are cleared inwardly and outwardly at the port Custom House of Solombola. **Lighterage:**—Deals, $4\frac{1}{2}$ rbls. per standard; oats, 2 rbls. 10 cps. per ton; linseed, rye and wheat, 1 rbl. 80 cps. per ton; tar, 30 cps. per barrel. **Stowage:**—Flax, 2 rbls. 20 cps. per ton; tow and codilla, 3 rbls. 80 cps. per ton; tar, 6 cps. per barrel; pitch, 7 cps. per barrel; deals, 1 rbl. 20 cps. per standard; oats, 2 rbls. 50 cps.; linseed, rye, and wheat, 2 rbls. 70 cps. per 1,000 poods. Customs of this and all White Sea ports are regulated by a so-called "Merchants' Convention." By this a sufficient day's work for loading is as follows: Grain or seed, 1,000 qrs.; flax, 60 tons; deals and battens, 20 standards per winch; boards, 15 standards; staves, 12 standards; pitch, 600 casks; tar, 500 barrels.

CONVENTION OF THE ARCHANGEL TRADE RESPECTING THE REGULATIONS AND CHARGES FOR IN-COMING AND OUT-GOING SHIPS AND STEAMERS ENGAGED IN THE FOREIGN TRADE AT ARCHANGEL.

With the view of regulating accounts between captains, consignees of vessels, and owners of goods by in-coming and out-going vessels engaged in the foreign trade of the port of Archangel, the following regulations have been established by the interested parties:—

1. Every captain is bound to leave the encashment of his inward freight

Russia—Archangel (continued).

to his consignee, and to pay him 3 per cent. commission on the amount thereof, unless otherwise stipulated in charter party.

2. The inward freight both for ships and steamers is to be calculated at the last St. Petersburg exchange received here at the final discharge of a vessel or steamer.

3. In the event of goods being discharged damaged out of a ship or steamer, or if any packages or pieces be wanting, the receiver of the goods must at once give notice thereof to the captain or mate. Any damaged goods must be weighed by the receiver, and he must see that due entry of the damaged weight be made in the Custom House papers.

4. Notice of any claim for compensation for losses sustained through damaged or missing goods, or short delivery, must be made in writing by the receiver of the goods to the consignee of a ship or steamer within three days, with an approximate nomination of the probable amount of loss, otherwise he loses his right to compensation, and must pay the freight in full.

5. Regarding commencement of lay-days, if steamers or sailing vessels give notice of being ready to receive cargo then lay-days to commence the next day.

Pro Forma Charges on a steamer of 2,284 tons reg., ballast in, and with a cargo of 1,812 stds. wood out, drawing about 21 ft. loaded :—

	Rbbs.	cps.
Harbour dues at 20 cps. per net reg. ton	456	80
Address commission, 55 cps. per net reg. ton	1,256	20
Pilotage in, 12 cps. per net reg. ton, and with shiftings, 6 cps. per net reg. ton.	411	12
Towage.	150	00
Stowage of 1,812 stds. wooden goods at 1 rbl. 20 cps. per std.	2,174	40
Lighterage of 372½ stds. over bar at 4 rbbs. 50 cps. per std.	1,676	25
Towage of lighters over the bar	185	00
Provisions account	281	60
	6,591	37

Exchange at 9.46 rbbs. = £1 = £696 15s. 3d.

ARENSBURG.

Arensburg, in lat. 58°15' N., long. 22°30' E., is on the S.E. coast of the Island of Oesel.

Population.—5,000.

Imports.—Coal, dried skins, tanning wood, etc.

Export.—Timber.

Accommodation.—There is a quay here where vessels with a draught of 12 to 13 ft. can load. The anchorage is good. Vessels coming from the W. must approach by the old roadstead, where pilots can be had. To the E. of the Abro Island are leading lights which lead to the quay at Roomasaar. Strangers, however, should not make use of this without a pilot.

Pilotage.—90 cps. per foot draught, in and out.

Port Charges.—**Towage** :—To and from the ballast ground, 5 rbbs.

50 cps. **Custom and Town Dues** :—20 cps. per reg. ton in and out. **Custom Office Dues** :—30 cps. **Custom House Watcher** :—40 cps. per day for every day the vessel remains in port. If the vessel is loading on the coast, about 20 rbbs. are added for the journeys of the Custom House officer. **Fresh Water** can be obtained from the town : 300 stoof (=80 gallons) cost about 1 rbl. Ships' stores are rather scarce and dear. Fresh beef, 18 cps. per lb.

Russia.**BATOUM.**

Batoum, in lat. $41^{\circ}38'$ N., long. $41^{\circ}40'$ E., is situated on the S.E. shore of the Black Sea.

Population.—28,000.

Imports.—Tin plates, iron pipes, and firebricks.

Exports.—Petroleum products, cotton, cereals, manganese, walnut wood, and liquorice root.

Accommodation.—The bay is a mile in breadth from E. to W. and half a mile in depth from N. to S. The only gales to be feared are from the northward, which are rare. All vessels must have their anchors buoyed. In the Petroleum Harbour are five berths for tank steamers. The depth of water varies in different parts of the harbour from 24 to 30 ft. At the quay for case oil steamers the depth is 26 ft. In the Petroleum Harbour and in the outer part of the harbour there is accommodation for 20 steamers. The depth of water varies from 22 to 25 ft. A dredger is constantly at work. There is a 40 ton floating steam crane belonging to the Russian Steam Navigation Co., who also do small repairs.

Pilotage.—There are three pilots. The charges are 2 cps. per reg. ton; 50 cps. per foot draught entrance and clearance; and 10 to 15 rbls. for boats and mooring.

Port Charges.—Lastage and Lighthouse:—20 cps. per reg. ton.

Tonnage Dues:—10 cps. per reg. ton in, and 10 cps. per reg. ton out.

Quarantine Dues:—1 cp. per reg. ton. **Mooring:**—20 rbls. **Office Expenses:**—15 cps. A further charge of 80 cps. per day is made for two soldiers to guard the vessel when in cargo. Clearance, in and out, 5 guineas.

BERDIANSK.

Berdiansk, in lat. $46^{\circ}47'$ N., long. $36^{\circ}49'$ E., is situated on the N. shore of the Sea of Azov.

Population.—32,000.

Imports.—Rice, nuts, coffee, oil, coal, etc.

Exports.—Wheat, barley, linseed, hemp, wool, and skins.

Accommodation.—The roadstead is capable of accommodating a large number of vessels. The usual anchorage is 3 miles S.W. of the town, and vessels generally bring up in $16\frac{1}{2}$ ft. of water; after taking in a few lighters of wheat, etc., they usually shift their berth to deeper water to complete their cargoes. The spit at Berdiansk appears, since the last survey, to have extended much further to seaward. At the distance of a mile from the lighthouse there is now only 8 to 10 ft. of water, and at one and three quarter miles 16 ft. Buoys have been placed about two miles from the lighthouse, to indicate the commencement of the shoal water, and vessels keeping outside these will find plenty of depth. The anchorage is in soft mud. A breakwater has been constructed in 14 ft. of water, and extends 1,073 yards from the shore, sheltering the wooden pier used for loading, in the frequent southerly gales. Depth of water in the new port is 12 to 14 ft.

General Regulations.—The navigation of the Sea of Azov generally commences the first week in April and terminates the last week in November. It is considered unsafe for vessels to prolong their stay after

Russia—Berdiansk (continued).

that date, as they incur the risk of being caught in the ice. When masters of vessels observe the "barber" flying, it is an infallible sign of approaching frost. There are no ports in the Sea of Azov suitably adapted for vessels to winter in. Kertch is invariably chosen for that purpose.

It is very important for masters to prepare a very clear manifest of all ships' stores, etc., previous to arriving at Kertch, especially the weight and quantity of sacks.

In contracting charters for sailing vessels, 35 to 40 days are usually allowed, free of charge, for loading and discharging cargo; and a clause in the charter party generally gives a further term of ten days, at about £5 per day, should the 35 or 40 days be found insufficient. These conditions are very necessary in places like Berdiansk, where the ships anchor in open roadsteads, and where a strong wind from any quarter may delay loading for several days together. With steamers, merchants get only about 11 days for loading and discharging, and should they require more time they must pay £40 per day.

Ballast is thrown overboard in the ballast ground.

Port Charges.—**Discharging**:—7 cps. per last. **Loading**:—10 cps. per last. **Light Dues**:—7 rbls. 15 cps. **Entrance and Clearance Fees**:—20 rbls. **Labour**:—Steamers employ a gang of men to load and trim at the rate of from 40 to 45 rbls. per 1,000 chetwerts. Sailing vessels load with their own crew. **Tugboat Hire**:—5 rbls. per 1,000 chetwerts.

Pro Forma Charges on a steamer of 1,084 reg. tons:—

	Rbls. cps.
Telegrams and postage	3 20
Port charges	157 00
Declarations and stamps	5 00
Gratuities	10 00
Bills of health	13 00
Consul's fees	1 25
Labourers for loading and trimming, 14,000 chet. at 40 rbls. per 1,000 chet.	560 00
Steam launch, attendance on ship, etc.	70 00
Drosky and cart hire	5 00
100 mats	28 00
16 planks for shoots	14 40
Custom House business	20 00
Three dozen grain baskets	10 80
Nails	2 70
Water	12 00
Hotel bill	15 55
	<hr/>
	927 90
Provision account up to	85 00
	<hr/>
	1,012 90

Exchange at 9.46 rbls. = £1 = £107 1s. 6d.

BOLDERAA.

Bolderaa is in lat. 57°2' N., long. 24°3' E.

Population.—About 5,000.

Import.—Coal.

Export.—Wood.

Accommodation.—There is a depth of 25 ft. at high water, and of 23 ft. 6 in. at low water. Railway connections with the interior of Russia. There are two floating docks which can be used separately or to-

Russia—Bolderaa (*continued*).

gether, and are capable of taking a vessel 300 ft. long, 50 ft. beam, and 17 ft. draught. There is also a patent slip that has taken a vessel of 2,000 tons, drawing 5 ft. forward and 14 ft. aft.

Pilotage.—Compulsory. 4 cps. per ton for steamers and sailing ships.

Port Charges.—Same as Riga.

CRONSTADT AND ST. PETERSBURG.

Cronstadt (lat. 59°59' N., long. 29°47' E.) is a large naval and commercial port in the Gulf of Finland, about 20 miles from St. Petersburg (lat. 59°57' N., long. 30°20' E.).

Population.—Cronstadt 59,525; St. Petersburg 1,678,000.

Imports.—Coal, coke, and pig iron.

Exports.—Timber, deals, wood, lath wood, rickers, pit-props, etc.

Accommodation.—**Cronstadt.**—The harbour is exposed to westerly winds, and the accommodation for merchant vessels is limited. There is room in the harbour for about 60 steamers drawing up to 18 ft. in the second tier, and for about 40 steamers drawing up to 23 ft. in the first tier.

There are six docks and two slips. The docks all belong to the Government, but if free are available to merchant vessels. Peter Dock is of large dimensions, but narrow. The Nikolai and Constantine Docks are large enough to receive ironclads, the former of the second class, the latter those of the largest size. No. 1 Floating Dock is in five parts; No. 2 is in three. They will lift 5,000 and 2,000 tons respectively. The Alexander Dock is entered from the Middle Harbour at the N.E. corner. The transverse slip is for torpedo boats. The patent slip has a lifting power of 2,000 tons. There is also a private floating dock of 200 tons lifting power.

St. Petersburg.—Communication between Cronstadt and St. Petersburg for sea-going vessels is now maintained by means of the new maritime canal, which has a depth of from 23 to 25 ft., according to the wind. No charge is made for use of the canal. The canal ends at the Goutoueffski Basin, where it enters the river Neva. Steamers with general cargo discharge in this basin; vessels to be loaded with timber proceed to the Barotchny Basin, a new harbour in the bend of the sea-canal, where there is accommodation for from 75 to 100 steamers at one time. Coal cargoes are discharged into lighters in the river. The Government have a patent slip. The Russian Government Dockyard is here, and also five other shipbuilding firms. There are large floating sheers, and two very large wharf sheers. There is also a crane with a lifting capacity of 150 tons, and several small wharf cranes. All kinds of repairs can be executed.

General Regulations.—**Cronstadt.**—Vessels discharge into and load from lighters, in which the goods are conveyed to and from St. Petersburg.

The captain of the vessel will be required on his arrival off Cronstadt to deliver to the Custom House authorities the documents required by the Custom House, together with his declaration relative to the vessel's cargo. The Custom House inspection of vessels near the guardship at the mouths of the Neva is abolished; and, as a sanitary measure, all vessels arriving from

Russia—Cronstadt and St. Petersburg (*continued*).

abroad are required to hoist on one of their masts a red flag, as a signal to the guardship of the outer roadstead of Cronstadt that they are provided with a bill of health, delivered by the Russian Consulate of the port of their departure. Vessels not being so provided with a bill of health must stop near the above-mentioned guardship, and await the directions of the maritime authorities; moreover, vessels without exception must stop near the guardship when they perceive the pilot flag hoisted on one of its masts, which will signify that vessels are not permitted to enter the inner roadstead, on account of its crowded state or for other causes. Vessels discharging or loading ballast at Cronstadt must use the prams supplied for the purpose by the town at a charge of 1 rbl. per last. According to the new Russian Customs regulations, which are strictly enforced, the captains of ships bound to this port must have on board the following documents: (1) Manifest, signed by the ship's agent or broker; (2) bills of lading; (3) captain's declaration; (4) list of ship's stores; (5) list of ship's provisions; (6) list of crew; (7) list of passengers, if any; (8) bill of health; and (9) articles and register.

If the bills of lading, etc., are completed after the vessel sails, they must bear the signature of the captain or his agent at the port of loading, and be forwarded to the vessel's agent at Cronstadt in time to be handed to the Customs authorities before the vessel arrives. No letters are allowed to be delivered on board until after the Customs clearance, and all errors in bill of lading are visited with fines. Vessels proceeding to St. Petersburg must undergo a preliminary Customs clearance at Cronstadt.

St. Petersburg.—Every captain is bound to leave the encashment of his inward freight to his inward addressee, and to pay him 3 per cent. commission on the amount thereof, unless otherwise stipulated in the charter-party. The inward freight, both for ships and steamers, is to be calculated at the medium exchange on the day of arrival of the vessel. If the charter-party or bill of lading states that freight is payable at current exchange, receivers pay at the rate for 3 months' bills, so that in the owners' interest it is advisable to insert in the documents a clause to the effect that freight is payable at current rate for bankers short bills at sight without discount. In the event of goods being discharged damaged out of the ship, steamer, or lighter, or if any packages or pieces be wanting, the receiver of the goods must give notice thereof on board the vessel or lighter to the captain or mate; and damaged goods must be weighed by the receiver, and he must see that due note of the damage and weight be made in the Custom House papers. When a lighter is engaged for account of the ship or steamer, the captain is answerable for damage in the lighter, and for any missing goods, whether exports or imports, except in cases of average.

(*Note.*—It is understood that the captain has full right to compensation for any loss or damage to goods in the lighter, and for missing goods, from the owner of the lighter.)

Notice of any claim for compensation for losses sustained by damaged goods, by missing goods, and by short delivery, must be made in writing by the receiver of the goods to the inward addressee of the ship within three days, and the amount of the claim sent in to the same within a month after the discharge of the ship, steamer, or each lighter; otherwise he loses his right to compensation, and must pay the freight in full. When the owner has taken delivery of his goods from the Custom House without having made

Russia—Cronstadt and St. Petersburg (continued).

any claim for compensation for damage, missing goods, or short delivery, or without producing proofs for such claims, the captain is freed from all further liability, and is entitled to receive his freight in full.

Cronstadt and St. Petersburg Trade Convention.—If the ship or steamer be chartered only to Cronstadt, the captain has the right to receive his freight as soon as his cargo is discharged in good order, except in such cases when the existing Custom House regulations do not admit of an examination of the goods by the receiver before they reach St. Petersburg. Ships and steamers going straight to St. Petersburg, or straight from St. Petersburg, neither discharging nor loading in Cronstadt, and not requiring the assistance of the Cronstadt agents, pay no Cronstadt commission. In St. Petersburg they pay their outward addressees 50 copecks per last when loaded, and 10 copecks when in ballast, independently of the lastage money charged by the Government, and of any expenses incurred for their account; and receive their accounts and clearance documents from their outward addressees on leaving St. Petersburg. Ships and steamers loading and discharging, wholly or in part, at Cronstadt, pay their Cronstadt agents 30 copecks commission, and their outward addressees in St. Petersburg 30 copecks address money—in all 60 copecks per last independent of the lastage money charged by the Government. Ships and steamers which either discharge only part of their cargo in Cronstadt, or load only part of their outward cargo in Cronstadt, pay their outward addressees address money on leaving, in accordance with rule 7 of this convention, 50 copecks, when loaded, and 20 copecks when in ballast, and, over and above that, to the Cronstadt agents 10 copecks per Russian measured last, independent of the lastage money charged by Government. Accounts with captains, relating to other items of expenditure, must be settled on the basis of this convention, according to the accompanying table of charges. All ship charges not named herein, such as Consular fees, hospital dues, pilotage, bridge dues, cook-house charges, brokerage or freight, etc., have to be paid in accordance with the regulations of the respective Consulates and of the Government. The commission hitherto paid the Cronstadt agents on goods loaded in St. Petersburg is abolished, and in future the commission on imports and exports has to be paid them by the addressees of the ship by the captain, or by the owner of the goods as set forth in the accompanying table. The inward addressee has—1st, to encash the inward freight, and hold it at the disposal of the captain; 2nd, to assist the captain in clearing his ship at the Custom House; 3rd, to find out the receivers of goods, to order. The outward addressee has to clear the ship at the Custom House, and, so doing, has to receive from the captain of a vessel loaded in St. Petersburg address money as shown in Table 1, and of a vessel loaded in Cronstadt, in Table 2, on next page.

The addressee is bound to give the captain any such assistance as may be required. When the Custom House requires the addressee to give bond for the captain, the addressee does so only by mutual consent between himself and the captain. When a captain applies to a Cronstadt agent, the latter has to assist him to clear his ship at the Cronstadt guardship and Custom House, to assist him in the transaction of his business, and protect his interest in every way.

The Cronstadt agent has (1) to advise the inward addressee of the arrival of the vessel at Cronstadt, and to carry out all instructions sent him; (2) to look after the discharge and loading of the ship in Cronstadt, and to give

Russia—Cronstadt and St. Petersburg (continued).

due notice to all concerned ; (3) to carry out all instructions sent him by the addressee and owners of the goods and protect their interests.

Every allusion in the convention and the tables to ships refers equally to steamers.

Tables of charges on Russian and all foreign ships and steamers enjoying equal privileges with Russian vessels, engaged in the foreign trade of the port of St. Petersburg and Cronstadt :—

1. Ships coming to St. Petersburg with cargo, and loading outwards, pay :—

	When loaded.		When in ballast.	
	Rbls.	cps.	Rbls.	cps.
Commission on the inward freight—3 per cent. on the full amount of freight.				
St. Petersburg outward address money	0	50	0	20
Incoming and outgoing lastage money paid to the Custom House, per last.	0	40	0	40
For making out the outward manifest, if required	3	00	—	—
" " certificate of measurement, including the stamp, if required	5	00	5	00
Cronstadt agent, for assisting master when clearing in and out, from 20 rbls. to 40 rbls.				

2. Ships discharging and loading at Cronstadt pay :—

	When loaded.		When in ballast.	
	Rbls.	cps.	Rbls.	cps.
Commission on the inward freight—3 per cent. on the full amount.				
St. Petersburg address money, i.e., merchant's outward address	0	30	0	15
Commission to the Cronstadt agents ; incoming 15 c., outgoing 15 c.	0	30	0	15
Incoming and outgoing lastage money	0	40	0	40
Translating, and clearing ship's papers inwards and outwards, per ship	3	00	—	—
Making out the outward manifest, if required	3	00	—	—
" " certificate of measurement, including stamps, if required	3	00	5	00
Town dues, per last, only sailing vessels	0	9	0	9

Time Signals.—Cronstadt.—Chronometers can be checked. A wicker ball is hoisted on the mast of the Submarine Telegraph Office, 134 ft. above sea level, 8 minutes before noon, and dropped at noon, Cronstadt mean time. Noon at Cronstadt is 22 h. 0 m. 56.4 s. Greenwich mean time.

St. Petersburg.—A gun is fired at noon from Fort Petri-Paul, St. Petersburg mean time (Pulkowa), equal to 21 h. 58 m. 41.3 s. Greenwich mean time, and 23 h. 59 m. 55 s. local mean time.

Pilotage.—From the London Chest Lightship to Cronstadt, and from Cronstadt to St. Petersburg, pilotage is compulsory. The depth of water in the Sea Canal to St. Petersburg at the normal water level is 22 ft., and pilots are not bound to take charge of a vessel whose draught is less than 1 foot 6 in. under the depth of water in the canal. If desired by the master, the Cronstadt pilot will assist in getting the steamer into the harbour and into berth, or in taking her out, for which he is entitled to charge a fee of 3 rbls. Pilotage from the lightship to Cronstadt, 6 cps. per last ; from Cronstadt to the lightship, 6 cps. per last ; from St. Petersburg to Cronstadt, 6 cps. per last ; from Cronstadt to St. Petersburg, 6 cps. per last. **Towage:**—According to the vessel's cargo capacity : Steamers up to 2,000 tons cargo capacity, 20 rbls. for each tug ; over 2,000 up to 3,000, 25 rbls. for each tug ; over 3,000 up to 4,000, 30 rbls. for each tug ; over 4,000, 35 rbls. for each tug. For towage from a discharging berth to a loading berth in the same harbour the charge is the same as above, but with a reduction of 5 rbls. for each tug. The charge for

Russia—Cronstadt and St. Petersburg (continued).

towing a light steamer from the roads into the harbour is fixed according to her net reg. tonnage :—Up to 1,000 net reg. tons, 20 rbls. for each tug ; over 1,000 up to 1,500, 25 rbls. for each tug ; over 1,500 up to 2,000, 30 rbls. for each tug ; over 2,000, 35 rbls. for each tug. Charge for towage of sailing vessels is fixed according to the net reg. tonnage of the ship :—Up to 300 net reg. tons, 10 rbls. for each tug ; over 300 up to 600, 15 rbls. for each tug ; over 600 up to 1,000, 20 rbls. for each tug ; over 1,000, 25 rbls. for each tug.

Port Charges.—Hospital Dues :—Steamers, 75 cps. ; sailing vessels. 1 rbl. per man.

Stevedoring :—Stevedoring charges were (owing to strikes and the resultant increased wages paid) raised in July 1907, the following being the present rate :—

Cronstadt.—Discharging :—Welsh coal, 33.75 cps. per ton ; north country coal, 31 cps. per ton ; fire bricks, coke, and fuel, 44.80 cps. per ton. **Loading :—**Wood, 1.25 rbl. D.B. ; boards, rickers, and long props 1.35 rbl. per 165 cub. ft. ; pulpwood, short props, and lathwood, 1.25 rbl. per 216 cub. ft. ; firewood, 1.35 rbl. per 216 cub. ft.

St. Petersburg.—Discharging :—Welsh coal, 36.50 cps. per ton ; north country coal, 33.75 cps. per ton ; salt, 33.75 cps. per ton. For the hire of baskets, shovels, etc., an additional charge is made. Coke, fuel, and firebricks, 49 cps. per ton ; general cargo, 30 cps. per ton ; chalk, china clay, and spath, 40 cps. per ton ; sulphur ore, 25 cps. per ton ; sulphur, 42 cps. per ton not weighed, 45 cps. per ton weighed. **Loading :—**Grain, $2\frac{1}{4}$ cps. per chets. all round ; wood, 1.35 rbl. D.B. ; rickers, long props, and mining timber, 1.45 rbl. per 165 cub. ft. ; pulpwood, short props, and lathwood, 1.25 rbl. per 216 cub. ft. ; aspenwood $1\frac{1}{2}$ cps. per cub. ft. ; flax, 60 cps. per ton, tow, etc., in proportion ; general cargo, 35 cps. per ton ; eggs, 45 cps. per ton ; oil, 10 cps. per cask (hold) ; 7 cps. per cask (deck). The ship has also to pay for the insurance of the labourers employed.

Pro Forma Charges on a steamer of 2,628 tons reg., cargo of coal in to Cronstadt, and ballast out, drawing 23 ft. loaded :—

	Rbls.	cps.
Harbour dues at 20 cps. per reg. ton, and stamps	525	96
Agency, at $7\frac{1}{2}$ cps. per reg. ton	197	10
Pilotage, in and out, at 6 cps. per reg. ton and stamp	157	73
Towage, 35 rbls. per tug	175	00
Boat hire from 1 rbl. 50 cps. to 2 rbls. per diem, as per agreement.	20	00
Harbour pilots, 3 rbls. in and 3 rbls. out	6	00
Mooring boat, 5 rbls. in and 3 rbls. out	8	00
British seaman's hospital dues, at 75 cps. per man.	22	50

1,112 29 = £117 11s. 6d.

Pro Forma Charges on a steamer of 1,703 reg. tons, discharging and loading at St. Petersburg :—

	Rbls.	cps.
Pilotage in and out	102	18
Towage	120	00
Discharging 3,328 tons coal, including baskets, shovels, and insurance of labourers	1,300	00
Loading 18,800 qrs. oats, including insurance of labourers	650	00
Consular fees	1	25
Imperial tonnage dues 20 cps. per ton	340	60
Address commission 25 cps. per ton	425	75
Agency inward $7\frac{1}{2}$ cps. per ton	127	72
„ outward $7\frac{1}{2}$ cps. per ton	127	72

Carried forward 3,195 22

Russia—Cronstadt and St. Petersburg (continued).

Brought forward	Rbbs.	cps.
Boat hire	3,195	22
Postages, telegrams, and petties	5	00
Cronstadt account, including sea pilotage	18	50
Gratuities	185	00
Seaman's Institute	10	00
	3	00

3,416 72 = £361 3s. 6d.

EUPATORIA.

Eupatoria, or Koslov, in lat. $45^{\circ}12' N.$, long. $33^{\circ}23' E.$, is about 35 miles N. of Sevastopol.

Population.—40,297.

Exports.—Merino wool, hides, flax, barley, rye, salt, and millet.

Accommodation.—Vessels drawing 18 ft. anchor about a quarter of a mile from the town in a sandy bottom, and are protected during winds from N.E. by E., round N. to W. by N. This anchorage is dangerous during E. and S.E. winds. Vessels of larger draught anchor further off, in 4 to 5 fathoms. Steamers generally anchor $1\frac{1}{4}$ miles from the town in a good anchorage with a sandy bottom. Loading is carried on by lighters without decks, carrying 16 tons in good weather, and 10 tons in bad. Goods are shipped in sacks containing 5 poods, and the sacks are emptied on board. Eupatoria may be considered one of the worst loading ports on the Black Sea, being an open roadstead. In winter it is impossible to load or even communicate. Provisions are at the same price as other Black Sea ports. Fresh water is scarce and bad.

Port Charges.—**Customs Entry Dues**:—10 cps. per last. **Anchorage Dues**:—7 cps. per last. **Quarantine Dues**:—2 cps. per last. **Light Dues**:—14 rbbs. 30 cps. **Interpreter**:—3 rbbs. Vessels loading, 40 cps. per day for Customs officer. **Stowage**:—55 rbbs. per 10,000 poods of grain; wool, 50 cps. per bale; hides, 20 cps. per bale.

Pro Forma Charges on a steamer of 2,689 reg. tons, or 1,763 net, loaded with salt at Eupatoria:—

Translation of manifest	Rbbs.	cps.
Copy of register and muster roll, with translation	3	50
Custom House officer, 15 days on board, at 40 cps. per day	3	00
Lastage dues, 882 lasts (1,763 tons), at 10 cps. per last	6	00
Anchorage dues, 882 lasts at 7 cps. per last	88	20
Light dues	61	74
Quarantine dues, at 2 cps. per last	14	30
Interpreter	17	64
Petition stamps	3	00
English Consulate	12	15
Letters and dispatches	5	00
Provisions	40	00
Stowage, 55 rbbs. per 10,000 poods (220,000 poods.)	120	00
Car and boats	1,210	00
Dispatch facilities	35	00
Agency, £5 5s.	40	45
	42	00

1,701 98

Exchange at 9.46 rbbs. = £1 = £179 18s. 3d.

GHENITCH.

Ghenitch, or Ghenetski, is in lat. $46^{\circ}10' N.$, long. $34^{\circ}50' E.$

Exports.—Wheat, etc.

Russia—Ghenitch (*continued*).

Accommodation.—The roadstead, with anchorage in 16 to 20 ft., is about $2\frac{1}{2}$ miles from the town and is one of the best in the Sea of Azov.

Port Charges.—The only charge paid by a vessel of 480 tons reg., ballast in and cargo out, drawing 17 ft., was 15 rbls. for discharging ballast.

HAPSAL.

Hapsal is in lat. $58^{\circ}57'$ N., long. $23^{\circ}35'$ E.

Accommodation.—There are two channels leading to Hapsal, one having 10 ft., and the other 12 ft. of water. Vessels of 9 ft. draught can anchor within $1\frac{1}{2}$ miles of the town, and vessels of 12 ft. anchor in 15 ft. of water 3 miles from the town.

HORLI.

Horli is in lat. $46^{\circ}5'$ N., long. $33^{\circ}18'$ E., about 100 miles from Odessa.

Export.—Grain.

Accommodation.—There is a depth of 20 ft. in the harbour and in the channel leading to it, but steamers can only load down to 16 ft. 6 in. inside, and complete loading from barges outside the bar, which lies about 8 miles to the S. of the port itself. Horli is well protected by sand banks, by which it is practically surrounded, and loading can be carried on in almost any kind of weather, at the rate of about 500 tons per day.

The quay, alongside which steamers lie whilst loading, is about 280 feet long and about 30 feet above the level of the water. The grain is brought down to it from the stores, which are situated at a short distance from it, in carts, and, if the steamer that is loading is not too broad, the grain is tipped into shoots that convey it into the holds of the steamer, but should the vessel be too broad, then the grain is carried on board in bags and emptied into the holds in the usual way.

Akmetchet is in lat. $45^{\circ}30'$ N., long. $32^{\circ}42'$ E. Vessels load here about a mile from the land, cargo being brought off in barges. Churum is in lat. $46^{\circ}3'$ N., long. $33^{\circ}28'$ E., Sari-Bulat in lat. $45^{\circ}50'$ N., long. $33^{\circ}33'$ E., and Bakal in lat. $45^{\circ}45'$ N., long. $33^{\circ}15'$ E. At these three places steamers load at six to eight miles off the shore. Cargo is brought off in barges. There are no Custom Houses at these places, and steamers have to call first at Skadovsk, Horli, or Eupatoria for Custom House formalities.

Pilotage.—Not compulsory, but advisable for captains visiting the port for the first time. The charges are :—3 cps. per last (2 net reg. tons) inwards, and the same outwards, with an additional 2 roubles per ft. of draught inwards, and the same outwards.

Port Charges.—**Lastage and Poold Dues:**—See **Russia. Stevedoring:**—2 cps. per chetwert.

Provisions and fresh water can be had at about Odessa prices.

HUNGERBURG.

Hungerburg in lat. $59^{\circ}26'$ N., long. $28^{\circ}8'$ E., is 7 miles from Narva.

Population.—3,000.

Imports.—Cotton, jute, and coal.

Exports.—Wood of all kinds.

Russia—Hungerburg (continued).

Accommodation.—There is a depth of 20 ft. on the bar at high water, in stormy weather ; 12 ft. at low water. Steamers drawing 16 to 16½ ft. load in the harbour. The harbour is good, and affords accommodation for a number of vessels. There is an hourly service of steamers between Hungerburg and Narva town.

Pilotage.—Compulsory. 5 cps. per net reg. ton, in and out, for steamers and sailing ships.

Port Charges.—**Mooring** :—From 5 to 10 rbls. **Clearance Fees** :—12½ cps. per net reg. ton. **Towage** :—In and out from the roads to Hungerburg and back, 40 to 60 rbls. **Boat Hire** :—From 8 to 10 rbls. **Consular Fees** :—2s. 6d. **Ballast** :—2 rbls. per ton. **Labour** :—From 3 to 4 rbls. per working day. **Harbour Dues** :—20 cps. per net reg. ton, in and out.

Pro Forma Charges on a steamer of 800 tons reg., cargo in and ballast out :—

	Rbls.	cps.
Harbour dues at 20 cps. per reg. ton	160	00
Clearing, 12½ cps. per reg. ton	100	00
Pilotage, in and out, 5 cps. per net ton reg.	40	00
Towage	50	00
Boat hire	20	00
Expedition fee	12	50
Other charges	30	00

412 50

Exchange at 9.46 rbls. = £1 = £43 12s. 1d.

KEM.

Kem, in lat. 64°58' N., long. 34°45' E., is a timber port on Popoff Island.

Accommodation.—Anchorage is in from 4 to 7 fathoms, and is well protected ; there is a clay bottom. Pilot station is on the Island Riavo, at. 65° N., long. 35° 4' E.

Pilotage.—In and out, together, 15 cps. per ton.

Port Charges.—**Government Dues** :—20 cps. per ton. **Ballast** :—

Discharged on the quay, 30 cps. per ton. **Address Commission** :—30 cps. per ton. **Stowage** :—1 rbl. 50 cps. per standard. No town or other dues.

KERTCH.

Kertch is in lat. 45°20' N., long. 36°28' E.

Population.—About 35,000.

Exports.—Wheat, barley, linseed, fish, caviare, wool, hides, and salt.

Accommodation.—The entrance to the straits is a little over half a mile wide. Anchorage in the outer roads is in 22 ft. 5 miles from the town. Smaller vessels can anchor in 15 ft. of water, 2 miles from the town, on a bottom of clay and mud. The depth of water on the bar at Yenikale is 20 ft. A guardship is stationed at Yenikale, and daily flies signals showing the depth of water existing over the bar on that day. Steamers must have 6 in. between the keel and the bottom, according to the depth shown by the guardship, before being allowed to cross the bar.

General Regulations.—The quarantine system has been greatly improved ; vessels taking pratique for the Sea of Azov having only, on their arrival in Kertch roads, to hoist the quarantine flag under their

Russia—Kertch (*continued*).

ensign on the fore-mast, when the quarantine doctor comes on board in a steam launch and visits the ship, without the master having to go either to the quarantine station or to the town. Immediately after receiving free pratique, as above, the ensign must be hoisted on the main-mast, when the Customs officers, also in a steam launch, come on board for visiting the vessel, and a manifest of all stores is made out on board. The charge for the manifest is a stamp of 80 cps. In view of two cases which occurred during 1907 in connection with pratique, it is as well to mention that masters expose themselves to a fine of 100 rbls. if they attempt to pass through the channel outward bound without awaiting the visit of the Customs; pratique is given opposite the fortress, and not at the Yenikale end of the channel. Masters leaving Kertch Straits for Arabat should see that the Customs official told off for duty with the ship is provided with a stamp for replacing seals, should it so happen that stores given out by the Customs at Kertch run out.

Pilotage.—Up and down the channel, 7 cps. per last each way; into harbour, 3 cps. per last.

Port Charges.—Anchorage and Lighthouse Dues:—Inwards and outwards, each way, 10 cps. per last. **Interpreter:**—3 rbls. **Lighterage:**—From 1s. 9d. to 2s. 3d. per ton wheat, according to season. **Labourers:**—From 100 rbls. to 120 rbls. per 1,000 chetwerts, for lightening steamers. The average charge for loading steamers at Kertch is from 8d. to 9d. per ton wheat, other grain or seed in proportion, according to London Baltic Tariff.

Quarantine Dues:—2 cps. per last. **Provisions:**—Meat, from 10 cps. to 12 cps. per Russian lb. (36 English lb. equal to 40 Russian lb.); tea, from 1 rbl. 20 cps. to 3 rbls. per lb., according to quality; pure coffee, from 50 cps. to 80 cps. per lb., according to quality; butter, from 25 to 50 cps. per lb., according to season; fresh fish abundant.

KHERSON.

Kherson is in lat. 46°37' N., long. 32°38' E.

Population.—60,000.

Export.—Grain.

Accommodation.—There is a depth of 22 ft. at high water; in the autumn, of 21 ft. to 21 ft. 6 in.

There are three loading berths for foreign vessels, their respective lengths being 420 ft., 145 ft., and 425 ft.

Pilotage.—Compulsory. 8½ cps. per reg. ton.

Port Charges.—Mooring:—10 rbls. per steamer. **Wharfage:**—10 rbls. per steamer. **Boat Hire:**—2 rbls. per day. **Light Dues:**—15 rbls. per steamer. **Labour:**—3 rbls. per day. **Tugboat** assistance in swinging steamer, or berthing, 10 rbls.

KOLA.

Kola is in lat. 68°48' N., long. 33°0' E.

Exports.—Sawn red and white-wood goods.

Accommodation.—Vessels of any draught can come up to Karabel Rock, a large stone like a Lapp hut, 2½ miles from the town; here there is 5 fathoms of water with a bottom of fine sand and mud. Vessels drawing 12 ft. can get to within half a mile of the town. It is desirable not to anchor

Russia—Kola (*continued*).

above Elovi Point on account of the rapid current. Kola is a free port, and is 691 miles from Archangel, with which communication is held during the summer months by steamer. Pilotage obtainable at the entrance to Kola Bay in Alexandrovsk.

KOVDA.

Kovda, in lat. $66^{\circ}30'$ N., long. $32^{\circ}40'$ E., is a timber port in Kovda Bay, Gulf of Kandalak.

Accommodation.—Pilot station, Isle Mali Mikkov. The approach has nowhere less than 49 ft. of water; well protected from all winds. Mail steamers call from Archangel fifty times, every Monday and Thursday, during the shipping season.

Saw Mills: On Berosov Island, lat. $66^{\circ}41'$ N., long. $32^{\circ}59'$ E. Vessels load on the N. side of the island, in 35 ft. of water, well protected from all winds. The bottom is of mud or sand.

On Sasetschnij and Jelovits Islands, lat. $66^{\circ}43'$ N., long. $32^{\circ}50'$ E. Vessels load on the N. side of Jelovits, in 30 ft. of water, well protected from all winds. The bottom is mud or sand and stone.

On Ovetchi Island. Vessels load on the S. side of the island in 33 ft. of water, well protected from all winds. The bottom is mud or sand and stone.

Pilotage.—15 cps. per ton, in and out.

Port Charges.—**Custom House Dues**:—20 cps. per ton. **Ballast**:—Discharged on the quay, 6d. per ton. **Address Commission**:—1s. per standard. No town or other dues. **Stowage**:—1 rbl. 50 cps. per standard.

LIBAU.

Libau is in lat. $56^{\circ}33'$ N., long. $23^{\circ}2'$ E.

Population.—About 64,000; including the War Harbour, about 85,000.

Imports.—Coal, coke, pig iron, steel, herrings, salt, cotton, chemical manures, agricultural and other machinery, fruits, colonial produce, dyewood, copra, etc.

Exports.—Oats, rye, barley, wheat, linseed, hemp seed, flax, wool, eggs, hides, meat, deals, oak staves, sleepers, pit-props, etc.

Accommodation.—The average depth of water on the bar is 27 ft.; in the Avant Port (new harbour), 26 ft.; in the winter harbour, 22 ft.; and in the inner harbour (old harbour), 19 to 22 ft. There is a stone quay on each side of the harbours, with warehouses and timber yards close at hand. Facilities for loading and discharging are excellent, and as a rule the dispatch is good. Libau is situated close to the sea, therefore the access to the port is very easy. Two large stone piers and two breakwaters, which have been erected at an enormous cost, allow entrance to the harbour in almost any weather, and afford excellent shelter for vessels in distress. Libau is the most southerly situated Russian Baltic port, and may be considered ice free. Salvage steamers and ice-breakers are stationed there. Two dry docks at the War Harbour, 600 ft. long, 85 ft. wide at the entrance, and 30 ft. deep on the sill, are available for private use. Extensive repairs can be executed to

Russia—Libau (*continued*).

hull and machinery on reasonable terms. There is also a set of sheer legs capable of lifting over 100 tons, and three floating cranes to lift 45, 25, and 15 tons. There is a Government floating dock in three sections, but it is not available for merchant vessels. Libau has regular steamship services to the principal Continental and English shipping ports, and has a railway connection with the interior of Russia. Bunker coal can be obtained at any time.

Pilotage:—Compulsory, per fixed scale. **Harbour Pilotage:**—2 rbls. each shift.

Port Charges.—Harbour Dues:—10 cps. per net reg. ton, in and out. **Steam-Tug Charges:**—From harbour to sea, or vice versa, 25 rbls. Vessels employing the steam-tug inwards have only to pay 12 rbls., 50 cps. outwards. For assistance, when shifting from one berth to another in the harbour, 5 rbls. each time. Under extraordinary circumstances a special agreement must be made. **Lifeboat Dues:**—1 cp. per last. **Stowage:**—For loading grain and seed, 20 rbls. per 1,000 qrs. ; flax, hemp, wool, 60 cps. per ton if hand stowed ; 1 rbl. 60 cps. per ton if screwed ; general goods, 50 cps. per ton. For discharging coal, manure in bags, and general goods, 30 cps. per ton.

EXTRACT FROM THE RULES OF THE PORT OF LIBAU.

Every ship entering the port with cargo (except salt cargoes and steamers chartered on " Balteon " terms) is compelled to address to the receiver of the cargo, and every ship arriving here in ballast must address to the shipper of the outward cargo, paying an address commission of 40 cps. per loaded last, as per printed scale of the Libau Exchange rules. This address commission includes a subvention to the steam-tug, say 10 cps. for sailing vessels and 5 cps. for steamers, per measured last.

The owner or master of the ship is, however, entitled to have his ship cleared through his agent, the address commission to be paid to the receiver or shipper of the cargo, the same as if he had cleared the ship.

Besides the address commission 1 per cent. for encashing the inward freight is due by the ship.

Vessels arriving with a full, or at least two-thirds cargo, and which are addressed to the receiver of the same, have, in addition to the inward address commission, to pay 2 per cent. on the outward freight to the shipper, unless the charter party contains a stipulation to the contrary, and unless the receiver of the inward cargo is also the shipper of the outward cargo.

MARIUPOL.

Mariupol, in lat. 47°5' N., long. 37°30' E., is situated on the right bank of the river Kalmius.

Population.—31,000.

Imports.—Machinery, tiles, fire-bricks, pitch, magnesite, etc.

Exports.—Cereals, coal, rails, etc.

Accommodation.—The anchorage is situated 3 to 6 miles distant, in 18 to 22 ft. of water, with the town bearing N. by W. $\frac{1}{2}$ W. mag. ; good holding ground. The harbour, which is 4 miles from the town, is well

Port Charges.—**Lastage** :—10 cps. per last. **Pram Hire**, to discharge ballast, 2s. per ton. **Merchant's Address Commission** :—2s. 9d. per std. of deals loaded. **Steam-Tug** :—If required, 10d. per ton inwards, and 1s. outwards. **Labour** :—2s. 9d. per day ; if engaged to load by the standard, 1 rbl.

*Russia.***NICOLAIEFF.**

Nicolaieff, or Nicolaev, in lat. $46^{\circ}41' N.$, long. $32^{\circ}2' E.$, is in the Government of Kherson, South Russia, and stands on the left bank of the river Boug. The commercial port at Popovia Balke is about 2 miles from the business part of the town and about 40 miles from Kinburn Spit.

Population.—About 92,000.

Imports.—Machinery, fire-bricks, tiles. General goods come through Odessa.

Exports.—Grain, bran, oil-cake, staves, iron ore, manganese ore, steel rails, pig iron, railway switches, steel girders, ferro-manganese, round oak logs, etc.

Accommodation.—There are no docks. The channel from Nicolaieff to the sea has a navigable depth of 25 ft. throughout.

Commercial Quay.—This quay belongs to the Russian Government, and is used for foreign vessels. The length is 3,850 ft. and the depth of water alongside is 26 ft. There are two private berths for ore steamers. The quay is fitted with 6 portable steam cranes to lift 5 tons, and a floating steam crane to lift 25 tons.

New (Pratique) Harbour is used exclusively for coasting vessels, and belongs to the Russian Government. The mole is about 2,800 ft. long, with a depth of water alongside of from 5 to 19 ft. There is an elevator for receiving and loading grain. In addition to this, there are several floating ones belonging to a private company.

Warwarofka is for foreign vessels. This is a wooden jetty on the river Boug, 5 miles above Nicolaieff. The accommodation is very limited, and the depth of water is about 25 ft.

The Russian Government has a dockyard at Nicolaieff and a slip to lift 1,200 tons.

Chantiers Navals have a dockyard which is one of the finest works in Europe. The company has a wet dock with 21 ft. of water, and sheer legs to lift 80 tons. $1\frac{1}{2}$ in. plates can be punched, and hydraulic riveters are used.

Ice usually sets in between the end of November and end of December, and remains until the middle or end of March. Two ice-breakers assist vessels up and down, free of charge, but delays are frequent during severe weather, and when the ice drifts.

General Regulations.—Should any unnecessary detention occur in obtaining clearance at Otschakoff, masters are requested to report the matter to their Consul at Nicolaieff.

According to the custom of the port lay-days only commence to count the day after the steamer is berthed alongside the quay. When chartering for Nicolaieff or Warwarofka owners should stipulate for time to count the day following arrival and report, whether berthed or not, or agree upon so many days' turn.

Time Signals.—Chronometers can be checked here. A ball is hoisted at the observatory, 229 ft. above sea level, 5 minutes before noon, and drops 10 ft. at noon Nicolaieff mean time, which is 21 h. 52 m. 6.1 s. Greenwich mean time. A gun is fired simultaneously.

Pilotage.—Compulsory. Vessels must bring up at the Black Buoy at the end of Kinburn Spit. After receiving the visits of the health and

Russia—Nicolaieff (*continued*).

Customs officers a licensed pilot comes on board to navigate the vessel to Nicolaieff. Should a pilot strand a vessel wilfully, or through carelessness or incapacity, and this be established through the courts, the Pilot Society is responsible for all costs and damages.

Pilotage Charges :—From Otchakoff to Nicolaieff, $8\frac{1}{4}$ cps. per last (2 net reg. tons), and the same for the return passage. **Mooring Fee** :—13 rbls. 75 cps., repeated when vessels have to shift their berth. Vessels going to Warwarofka and back pay $2\frac{3}{4}$ cps. per last extra.

Port Charges.—Lastage per net reg. ton, 20 cps. **Quarantine Dues** :—Per net reg. ton, 1 cp. **Agency Fee** :—Large steamer, £10 10s.; small steamer, £5 5s. **Discharging** :—General cargo, 30 cps. per ton. Hire of loading stages : Large, 4 rbls. each; small, 1 rbl. each. Vessels going to Warwarofka pay Zemstvo dues of 10 cps. per last. **Stevedoring** :—Single deck steamers— $1\frac{1}{2}$ cps. per chetwert for trimming grain; steamers with two or more decks— $1\frac{3}{4}$ cps. per chetwert. Stowing oil-cake—35 cps. per ton. Stowing rails—1s. per ton. Laying separations with grain cargoes, 25 rbls. in full. Rigging loading stages, about 20 rbls.

NOTE.—In calculating trimming charges the chetwert is taken at 10 poods for wheat, 9 poods for rye, 8 poods for barley, and 6 poods for oats. Shippers pay steamer $\frac{3}{4}$ of a cp. per 10 poods shipped, for matting and separating, but out of this sum $\frac{3}{16}$ of a cp. has to be contributed to the funds of the local Bourse or Exchange.

Pro Forma Charges on a steamer of 2,500 net reg. tons, loading a grain cargo :—

	Rbls.	cps.
Entering documents	10	00
Customs clearance	28	00
Pilotage, about	235	00
" gratuities, about	15	00
Lastages	500	00
Quarantine dues	25	00
Bills of health, say two	10	00
Harbour facilities	30	00
Doctor's attendance	10	00
Special watchman, optional, say 10 days	20	00
Harbour and river guardians, etc.	10	00
Otchakoff clearances, about	8	00
Bourse committee fee, optional	5	00
Stamps on documents, about	20	00
Permissions	3	50
Telegrams, telephone, carriage hire, stationery, postages; and petties, together about	75	00
	1,004	50 = £106 3s. 7d.

NIKOLAI.

Nikolai, or Nicolaia, in lat. $41^{\circ}55'$ N., long. $41^{\circ}47'$ E., is about 15 miles south of Poti.

This port was destroyed by the Turks during the war of 1877.

NOVOROSSISK.

Novorossiisk, in lat. $44^{\circ}42'$ N., long. $37^{\circ}46'$ E., is about 60 miles S.E. of Kertch Strait.

Population.—16,897.

Russia—Novorossiisk (*continued*).

Imports.—Chiefly agricultural machinery, fire-bricks, and general cargo in transit for the interior.

Exports.—Grain, linseed, oil-cake, petroleum, ore, liquorice root, oak staves, wool, potash, and cement.

Accommodation.—There is a good anchorage, landlocked on all sides except one, in 7 fathoms. The harbour consists of a large bay, protected by large moles of masonry. The Russian Government has also constructed extensive quays of masonry, but almost all loading (especially grain and oil-cake) takes place at the wooden piers of the Vladikavkaz Railway Company. These piers are five in number, and are lit by electric light. There is 27 ft. of water at the end of the piers, shoaling gradually. There are workshops, where repairs to hull and machinery can be made. A salvage tug with salvage pumps is stationed at Novorossiisk. All loading and discharging is done by the mechanical means of the Vladikavkaz Railway Company (cranes, trucks, and elevator), but outside this the railway company has nothing to do with the shipping trade. Coal and fresh water (good) are always to be had at Novorossiisk. The coal is Russian; English coal cannot be had. Steamers drawing 25 ft. can safely load at the piers and quays from railway-trucks, and 18 steamers of 4,000 tons d.w. can load at the same time, but often steamers of larger size (up to 8,000 tons d.w.) are loaded here. Most of the grain is loaded through the elevator by transporters down direct on board the steamers. There are large wooden and masonry warehouses, built for storing all sorts of merchandise, especially grain, to the amount of 65,000 tons, and, in addition to this, there is the elevator, with a capacity of 50,000 tons wheat. There are also 32 petroleum tanks, with a capacity of about 90,000 tons.

Port Charges.—**Custom Dues and Lastages** :—20 cps. per reg. ton. **Pier Dues** :—10 cps. per reg. ton. **Stevedoring** :—Grain, 2 cps. per chetwert of 10 poods; wool, 1 rbl. per ton; liquorice root, 40 cps. per ton; cement, 35 cps. per ton; oil-cake, 40 cps. per ton; general cargo, 45 to 50 cps. per ton; ore, 30 cps. per ton; oak staves, 60 cps. per ton.

Pro Forma Charges on a steamer of 1,153 net reg. tons :—

	Rbbs. cps.
In and out-going declaration and stamps	5 80
Custom House dues	234 70
Sundry translations of documents and stamps	18 00
Pier dues	115 30
Harbour facilities	20 00
Custom House expeditioner employed to clear the ship in and out	25 00
Labourers loading cargo, as per stevedore's account	883 10
Ship-chandler's account	53 45
Telegrams and postages in connection with loading	12 90
Droskies and boat hire	12 85
Turkish and Russian bill of health	15 00
Permission to load on holidays	6 00
" " at night	8 00
Quarantine fees	4 00
Manifest and bill of lading, plan of the cargo	4 50
Petties	3 95
Stamps on C.P. and B.L.	9 40
Agency fee, £5 5s. at 9 rbbs. 30 cps.	48 82

1,480 77 = £156 10s. 7d.

Russia.

ODESSA.

Odessa, in lat. $46^{\circ}29' N.$, long. $30^{\circ}43' E.$, is the most northerly and most important port of the Black Sea. Distance by sea from Liverpool, 3,335 miles.

Population.—450,000.

Imports.—Coal, iron, machinery, tobacco, manufactured goods, earthenware, cotton, jute, etc.

Exports.—Grain, sugar, wool, linseed, spirits, cattle, etc.

Accommodation.—There are five harbours at Odessa.

The **Quarantine Harbour** has an entrance 1,080 ft. wide and 32 ft. deep. The depth in the middle of the harbour is 24 ft., and at the quayside 28 to 30 ft. The length of quayage is 6,160 ft.

New Harbour.—The entrance is 1,080 ft. wide and 32 ft. deep. The depth inside is on an average 26 ft. and the total length of quayage 1,275 ft. Two berths are reserved for coal, travelling steam cranes being fitted for the purpose.

Pratique Harbour.—The entrance is 1,000 ft. wide and 20 ft. deep. The quay is 4,550 ft. long, and the average depth in the harbour is 16 ft.

Cabotage Harbour is reserved for Russian coasting vessels. The depth is 20 ft., and the entrance is 1,000 ft. wide.

Petroleum Harbour.—The total length of the mole is 2,825 ft., but only 900 ft. is available for vessels. The average depth at the entrance and quayside is 22 ft.

At Odessa there are two floating cranes with a lifting power of 25 tons each, and a powerful steamer for ice-breaking and salvage purposes. There is a floating pontoon dock that has a lifting power of 4,800 tons. This dock can be used in two parts with lifting power of 2,740 and 2,060 tons respectively. There are two slips with lifting powers of 1,100 and 700 tons. All kinds of repairs can be done at the shipbuilding yard.

General Regulations.—Steamer's turn for a berth counts from the moment the anchor is dropped inside the harbour. Vessels arriving at Odessa with cargo have the preference for a berth over vessels in ballast in the following cases :—(1) If they have not less than 300 tons of cargo, of which 200 tons may be tiles, and 100 tons general cargo. (2) If they have 500 tons of tiles only. (3) If they have not less than 1,000 tons of coal only.

A Russian bill of health must be brought from the last port of departure.

If the harbour master's steam-launch should not call alongside on arrival, so as to leave on board the usual guardian soldier to conduct the captain on shore, the captain can proceed at once to the pratique office, pointed out by a small yellow flag inside the harbour to the left, on entering the port. The captain must have with him his articles, bill of health, and register, together with the passports of the passengers, if any. Mates cannot get pratique unless the captain is unwell and not able to come on shore. It will save time, in getting pratique, if the captain before his arrival has ready a list of his crew, to be delivered at the pratique office, together with the ship's articles, also a list of stores and provisions, fancy articles, and bags. Should the harbour be frozen during the winter months, captains are permitted to come with the ship to the most available point, where they will always be met by the guardian soldiers, and their pratique obtained in due course.

Russia—Odessa (*continued*).

Pilots cannot be obtained for this harbour, Nicolaieff, or any other port, before the vessel has received pratique.

Lay-days only commence from the day the steamer moors alongside the quay.

Cargo, generally according to charter, has to be brought to and from the ship at the merchant's risk and expense.

Ships are fined for under or over delivery. The Custom House holds the master responsible for goods till they are in the Custom House, though there is half a mile between there and the ship; but masters can insist upon everything being checked off by the Customs officials as it leaves the ship.

Time Signals.—Chronometers can be checked. A ball is hoisted 5 minutes before noon, and dropped at noon, local mean time, on the office of the Russian Steam Navigation Company. Noon at Odessa is 21 h. 57 m. 0 s. Greenwich mean time.

Pilotage.—Not compulsory, but it is advisable to take a pilot. Charge 75 rbls. each way in and out.

Port Charges.—**Lastage** :—22 cps. per net reg. ton. **Consular Charges** :—About 1 rbl. 25 cps. Ash lighter, 15 rbls. Doctor, 8 rbls. Tugboat (if required), 50 rbls. **Custom House Clearance** :—20 rbls. **Bill of Health** :—6 rbls. **Discharging** :—No fixed rate, but the Governor-General has appointed a Commission to fix the rate of wages for dock labourers. **Stevedoring** :— $1\frac{3}{4}$ cps. per chetwert. **Provisions** :—Beef, 15 to 20 cps. per Russian lb. (9 lb. English=10 lb. Russian). Flour, according to the quality and price of wheat.

ONEGA.

Onega is in lat. 63°55' N., long. 38°12' E. The town is about 140 miles S.W. of Archangel, and is situated 3 miles up the river Onega.

Population.—About 3,000.

Imports.—Machinery, fish, salt, etc.

Export.—Deals.

Accommodation.—At high tide there is 10 ft. of water on the bar, and at low tide 3 ft. Large vessels load off an island, 8 to 10 miles from the mouth of the river, in from 25 to 35 ft. The Custom House proper is at the town. Lighters are employed to bring the cargo off from Onega. Two tugs run between Onega and the roads, for the purpose of towing lighters with deals to the ships. Ballast is discharged at the place appointed by the authorities for that purpose, near the island of Shaglan. Ships on arrival anchor in the roads until cleared by the Custom House officers, after which they proceed to the ballast ground, and, after discharging ballast, return to the roads for loading.

Pilotage.—Pilots are procured at Cape Orloff. The rate is 16 cps. per ton, in and out. **Towage** :—To or from the ballast ground, 15 rbls. each way.

Port Charges.—**Lastage** :—20 cps. per ton entered. **Monastery Dues** :—6 rbls. **Doctor's Fees** :—5 rbls. **Address Commission** :—50 cps. per std. **Stevedore Loading** :—25 cps. per std. Steamers coming to Onega pay the same charges as sailing vessels, but they generally employ a stevedore with men to load cargo night and day, at 1-50 rbls. per std.

Russia—Onega (*continued*).**Pro Forma Charges** on a steamer of 1,500 net reg. tons:—

	Rbbs.
Pilotage, in and out, at 16 cps. per ton	240
Ship's dues, at 20 cps. per ton	300
Monastery and doctor's charges	11
Ship's agency, at 25 cps. per ton loaded (2 tons = 1 standard) 1,000 standards	500
Stowage of 1,000 standards	1,500
Water supplied by steam-tug	25
Postage stamps, etc.	20

2,596 = £274 8s. 4d.
OSERKO.

Oserko, or Ozerko, on the Murman coast, at the head of Motovski Gulf, is in lat. 69°43' N., long. 32°6' E.

Accommodation.—The port is about 2 miles long by 1 mile broad. On the bar there is never less than 20 ft. at high water. A steamer crossed the bar 2½ hours after high water, drawing 17 ft. The channel is straight, and well buoyed. The inner bay is completely land locked, with safe anchorage from all winds. Pilots can be had.

OTCHEMTCHYRY.

Otchemtchyry, or Ochemchiri, is in lat. 42°43' N., long. 41°23' E.

Exports.—Grain, wood, etc.

Accommodation.—It is an open roadstead, and is only frequented by a few ships every year. The anchorage is about 1½ miles off shore, in 7½ fathoms, good holding ground, but exposed to all winds. It is safe during the summer months, but may be dangerous during the winter. There is a Custom House. Grain is brought off in boats. Ballast is thrown overboard in the roadstead. Fresh water has to be brought in the ship's boats from a small river about 2 miles S. of Otchemtchyry. Ship's stores cannot be had.

The only charge made by the Customs on a vessel of 431 tons reg. was 21 rbbs., about £2 5s.

PERNAU.

Pernau, in lat. 58°22' N., long. 24°31' E., is situated at the end of a bight (Pernau Bay), on the N.E. coast of the Gulf of Riga.

Population.—About 13,500.

Imports.—Coal, coke, pyrites, herrings, manure, etc.

Exports.—Flax and flax codilla, barley, rye, crushed and whole linseed, deals, sleepers, square cut timber, Norwegian cut baulks, and pit props.

Accommodation.—The port is easy of access in all weathers. The normal depth of water in the channel from the bar to the electric crane berth is 17 ft. Dredging will be continued, and an ultimate depth of 18 ft. is contemplated, but it will be some time before this can be accomplished. The quays are convenient, the depth of water close alongside being 16 ft. In 1903 a shoal marked on the Russian Admiralty chart as carrying 24 ft. of water was found to carry only 16 to 18 ft., in approx. 58°13' N., 24°21½' E., in Pernau Bight, with Takkerort Church S. 76° E. five miles, and Sorkholm Island beacon S. 65° W. A floating beacon marks the spot. There is a

Russia—Pernau (*continued*).

lighthouse on Sorkholm Island. With very few exceptions steamers with coal cargoes discharge alongside the electric crane berth, which is situated about two miles above the floating bridge. These cargoes are taken out very rapidly—day and night—with three electric cranes working simultaneously at one cargo. Wood-pulp is also loaded with great dispatch at an adjoining berth, which is provided with an electric crane. Prevalent wind S.W. Vessels bound for Pernau should be careful to keep clear of Sorkholm Reef (E. of Kühno Lighthouse), which is distinguishable by a red floating beacon with red broom. There is also a beacon on the S. point of Sorkholm Island. Pernau roadstead, though exposed to winds from the S.W., is quite safe. Vessels loading timber anchor in the river. Ships may anchor anywhere in the bay, depth of water permitting. When they have to lighten before entering the port, or when completing cargo outside, they usually anchor in the roads, in 18 ft. of water, about $1\frac{1}{2}$ miles from the end of the breakwaters, with both harbour lights in line. Vessels arriving, drawing 20 ft. and upwards, anchor E. of Takkerort Church at the entrance to Pernau Bay, in 5 fathoms of water, pending the arrival of pilots. The anchorage ground in the bay and river is excellent—stiff clay.

Supplies of all kinds obtainable, and cheap. **Water** of good quality—spring and artesian wells.

Pilotage.—Compulsory.

Port Charges.—Stevedoring :—Hand stowing flax, 70 cps. per ton ; codilla, 105 cps. per ton ; Norwegian cut baulks, 135 cps. per Groningen tult ; deals, battens, and boards, 100 to 110 cps. per std. ; D.B.B., 1·10 to 1·30 rbls. per St. Petersburg std. ; props, 1·10 rbl. per Gothenburg std. ; wood pulp, 35 cps. per ton. Discharging salt or coal, 35 cps. per ton.

Lighterage :—According to the custom of the port—on inward cargoes is at the ship's expense, on outward cargoes is at the merchant's, provided the charter party contains no stipulation to the contrary. Cost on flax, 126 cps. per ton of 63 poods ; codilla, 189 cps. per ton ; grain or seed in bulk, 130 cps. per 15 chetwerts (about 2 tons). On imports no fixed rates. As a rule there is a plentiful supply of lighters of various sizes. There are two powerful tugs, one of which is also a good ice-breaker. Charges as per agreement. **Merchant's Address Money**, including clearing charges :—On inward cargoes, 2 per cent. on inward freight ; also 10 cps. per ton on coal and salt ; 12 cps. per ton on manure ; 15 cps. per ton on goods ; and 2 cps. per barrel of herrings. If the ship leaves in ballast, 4 cps. per net reg. ton extra. On out-going cargoes : 28 cps. per last of 60 poods flax, or 40 poods codilla, or 15 chetwerts grain or seed in bulk, or 12 barrels of linseed ; 75 cps. per Groningen tult, Norwegian cut baulks ; 30 cps. per 80 cubic ft. deals and square-cut timber ; 30 cps. per 65 cubic ft. pit-props.

Pro Forma Charges on a steamer of 740 net reg. tons, with a cargo of 1,374 tons coal in, and a cargo of 560 Gothenburg stds. of pit-props out :—

	Rbls.	cps.
Tonnage dues, in and out	148	30
Pilotage, including shifting	56	33
Bridge money, 5 rbls. 50 cps. : Orphanage, 2 rbls. ; Impl. Life-boat Society, 2 rbls. 50 cps.	10	00
Discharging 1,374 tons coal, at 35 cps.	480	90
Carried forward	695	53

Russia—Pernau (*continued*).

	Rbbs.	cps.
Brought forward	695	53
Loading 560 standard props, at 1 rbl. 10 cps.	616	00
Address commission on inward cargo : 2 per cent. on freight of 2907.55, 58 rbbs. 15 cps. ; 10 cps. per ton coal, 137 rbbs. 40 cps.	195	55
Address commission on outgoing cargo : 560 Goth. standards of 180 cub. ft. = 100,800 cub. ft., at 30 cps. per 80 cub. ft.	378	00
Towage (varies according to services rendered ; this vessel paid)	85	00
	1,970	08 = £208 5s. 1d.

Pro Forma Charges on a steamer of 835 net reg. tons, with a cargo of 1,750 tons coal in, and ballast out :—

	Rbbs.	cps.
Tonnage dues, in and out	167	10
Pilotage	59	97
Bridge money, 4 rbbs. 30 cps. ; Orphanage, 2 rbbs. ; Impl. Life-boat Society, 2 rbbs. 78 cps.	9	08
Discharging 1,750 tons coal, at 35 cps.	612	50
Address commission :—2 per cent. on freight of 3,695 rbbs. 31 cps., 73 rbbs. 91 cps. ; 10 cps. per ton coal, 175 rbbs.	248	91
Clearing out in ballast, at 4 cps. per reg. ton	33	40
Towage	45	00
	1,175	96 = £124 7s. 1d.

PETCHORA.

Petchora, in lat. 68°30' N., long. 54°0' E., is near the mouth of the river of the same name, which falls into the Northern Ocean.

Import.—Salt.

Export.—Timber.

Accommodation.—The entrance is difficult, owing to the number of sandbanks which shift their positions from year to year, and a greater depth in the channel than 12 ft. cannot be relied upon. The navigation is open from about July 20 to the end of September. The river is open earlier than July, but the entrance is seldom free from ice before that month. Vessels above 12 ft. draught can load in the bay at the mouth of the river, but it is difficult, as there is generally a heavy swell. Vessels usually load about 30 miles from the entrance of the river. There is a steam-tug which tows vessels up. The timber is rather difficult to stow, and it has to be done by the crew. It is brought alongside in floats, and, during bad weather, sometimes gets adrift.

Provisions such as butter, bread, and fish are plentiful and cheap.

PODPAKHTA.

Podpakhta Bay is in lat. 69°11' N., long. 35°52' E.

Import.—Salt.

Accommodation.—The bay is 2 cables wide, about 3 cables long, and ranges in depth from 8 fathoms at the entrance to $\frac{1}{4}$ fathom at its head. It is sheltered from all winds.

PORT BALTIC.

Port Baltic is in lat. 59°21' N., long. 24°5' E., and is the terminus of the Baltic railway.

Population.—1,000.

Russia—Port Baltic (*continued*).**Imports.**—Scotch and Norwegian herrings, oranges, etc.**Export.**—Pit-pirops.

Accommodation.—The harbour is very small, with accommodation for four steamers. The depth of water in the harbour is 18 ft. The roadstead has a depth of 7 to 14 fathoms, and is well sheltered from all but northerly winds. Steamers should anchor in a line with the harbour, under the opposite coast. The entrance to the harbour is very narrow, and masters of vessels should be cautious, as there is a current running across the entrance. There are no regular pilots. Steamers only discharge in Port Baltic when navigation to Reval is closed. Port Baltic closes later and opens sooner than Reval.

Port Charges.—Same as at Reval.**PORT KUNDA.**

Port Kunda, or Kounda, is in lat. 59°30' N., long. 26°35' E., and is about 45 miles W. of Narva.

Imports.—Coal, coke, fireproof bricks, and clay.**Exports.**—Cement and timber (planks).

Accommodation.—It is an open roadstead, protected on the W. by the peninsula Tolsburg and the reef Pühjakarri, and on the E. by the peninsula Lattipah. About 10 miles to the N. are two islands, Little and Great Hoften. The port is exposed to the N.N.W. and N.E. winds, the entrance being marked by two brooms. A lighthouse is in action from July 15 to November 15. Anchorage is in 25 ft. of water on a sand and clay bottom, on the E. side of the bay, but vessels of less than 11 ft. draught can make fast to a pier 660 ft. long. Vessels in the open roadstead are loaded and cleared by lighters, towed by a tug to the pier and discharged by steam cranes; minimum in fair weather, 350 tons per day. Fresh water is supplied from a rivulet close to the pier.

Pilotage.—Not compulsory. Steamers, 1 rbl. per foot draught per ton; sailing vessels, according to agreement.

Port Charges.—**Address Commission** :—3 per cent. of freight.

Tonnage Dues :—40 cps. per last (2 tons). **Clearance Fees** :—25 cps. per last. **Labour** :—On board, discharging and loading cargo, 25 cps. per ton.

Pro Forma Charges on a steamer of 435 lasts, carrying a cargo of 1,619 $\frac{1}{2}$ ₀ tons of coal :—

	Rbls.	cps.
In and out-going declaration and stamps	12	00
Custom House dues at 40 cps. per last, and stamps 32 cps.	174	32
Clearing pass and stamps	8	00
Reporting at the Custom House in and out, at 25 cps. per last	108	75
Pilotage in and out	15	00
Labourers on board discharging and loading cargo.	404	90
Hire of four shoots at 1 rbl.	4	00
Baskets, 31 at 1 rbl. 50 cps.	46	50
Custom House soldier, 5 days at 40 cps. per day	2	00
Telegrams	3	30
Postages and petty expenses	2	02
Cash.	2,773	53
	3,554	32 = £375 14s. 6d.

Russia.

POTI.

Poti is in lat. $42^{\circ}7' N.$, long. $41^{\circ}40' E.$ The town of Poti stands $1\frac{1}{2}$ miles from the mouth of the river Rhion, on its S. bank.

Population.—About 9,000.

Exports.—Maize, manganese, boxwood, walnut wood, etc.

Accommodation.—The anchorage is one mile S. by W. of the lighthouse, in about 10 fathoms; bottom mud and blue clay. The depth of water on the N. bar does not exceed 6 ft. Russian steamers only load and discharge at the middle mole, while foreign steamers load under the N. mole, where there are three quay berths, the depth of water being 26 ft. There are also three quay berths in the new inner harbour. Foreign steamers can load down to 24 ft. at all the quay berths. The inner harbour is a safe port, where steamers can load and discharge in any weather. In gales from the W. and N.W. the outer harbour, at the entrance to which there is a depth of 26 ft., is much exposed, and, unless the weather is very settled, it is desirable to be able to get up steam at short notice; strong mooring ropes are necessary. Cargo, chiefly maize and manganese, is brought alongside in railway trucks. A pilot is appointed, and his services are obligatory.

The river water is used, being wholesome, and easily obtainable.

Provisions:—Beef, 13 cps. per lb.; vegetables vary. **Stevedoring:**—The cost of stevedoring varies with the species of goods and the amount of competition, from 6*d.* to 1*s.* per ton.

Pro Forma Charges on a steamer carrying 5,810 tons of manganese ore:—

	Rbbs.	cps.
Pilotage in and out, shiftings	134	00
Port charges	502	55
Hire of stages, 15 rbbs. for 1,000 tons	88	50
Consular fees	6	25
Bill of health, Turkish	5	50
Water	3	75
Ship-chandler's account	394	06
Workmen keeping hatches clear	133	00
Trimming	105	00
Cab and boat hire	20	00
Gratuities	35	00
Telegrams and stamps	16	53
Petties	5	00
Cash to captain	100	00
Doctor	15	00
Medicine	9	49
Ash boat	20	00
Tugboat	25	00
	1,618	63
	£	s. d.
1,618 rbbs. 63 cps. at exchange of 9.46 rbbs. per £	171	2 0
Agency	5	5 0
Loading charges, 5,810 tons at 1 <i>s.</i>	290	10 0
		466 17 0
Commission, 3 per cent.		14 0 1
		<u>£480 17 1</u>

REDOUTE-KALE.

Redoute-kale, in lat. $42^{\circ}14' N.$, long. $41^{\circ}37' E.$, is situated at the mouth of the river Kopi.

Russia—Redoute-kale (*continued*).**Population.**—About 200.**Accommodation.**—The bar can only be passed by vessels of 5 ft. draught. The anchorage outside, about three-quarters of a mile from the entrance, is in 8 fathoms.

The place is unhealthy. This port is very seldom visited now, as the trade has gone to Poti. There are only a few cargoes of maize loaded annually. Vessels must enter and clear at Poti.

RENI.

Reni is in lat. 45°27' N., long. 28°19' E.

Population.—7,000.**Import.**—Marseilles tiles.**Export.**—Cereals.**Accommodation.**—In the mooring places for vessels there is a depth of from 15 to 30 ft.**Pilotage.**—Compulsory. Rates according to special tariff of the European Danube Commission.

Port Charges.—**Clearance Fees** :—10 cps. per ton net reg., and from $\frac{1}{2}$ cp. to 1 cp. per pood of goods landed and shipped abroad, according to the class of goods. **Towage** :—According to arrangement. **Labour and Brokerage** :—As per agreement.

REVAL.

Reval, in lat. 59°26' N., long. 24°48' E., is situated at the head of a bay, the entrance to which is guarded by the islands of Nargen and Wulff. Vessels bound for Reval pass either between Surop Point on the mainland and Nargen Island, or between the latter and Wulff Island. Reval, besides being the centre of a large import and export trade, is the port of discharge for large quantities of goods destined for Moscow and the adjoining districts, and for St. Petersburg. It is also the nearest winter port for Siberian produce.

Population.—64,572.**Imports.**—Cotton, tea, machinery, salt, herrings, coal, and all kinds of merchandise.**Exports.**—Wheat, rye, oats, barley, buckwheat, flax, codilla, tow, hemp, hemp yarn, spirits, eggs, butter, game, wood, etc.

Accommodation.—There are no Government pilots, but a pilot can always be obtained from the island of Nargen and also at Surop, and unless masters of vessels are well acquainted with the coast, it is advisable for them not to attempt to reach Reval without one. Vessels arriving off Nargen or Surop during the night, in autumn and winter, if there is drift ice, will do well to wait for daybreak before proceeding to enter the roads.

The roadstead is well sheltered, and is an excellent holding ground, but vessels bound for Reval, arriving with the wind strong from the N., should not attempt to enter the harbour, but anchor about two to three miles off until the wind moderates. Vessels arriving off the harbour after dark must anchor likewise in the roadstead till daybreak.

On approaching the entrance to the harbour, vessels get a harbour pilot

Russia—Reval (continued).

on board, who will bring them to the berth assigned to them in the harbour. There is water enough in the old harbour to allow of vessels drawing up to 25 ft. being berthed alongside the quay. There is a grain elevator that will take 10,000 tons of grain, and two floating cranes to lift 10 and 40 tons respectively. The Exchange Committee owns two ice-breakers, the *Stadt Reval* and the *Assistent*. The former assists vessels to and from Dagerort if required; the latter in the harbour. The Government ice-breaker *Ermak*, 7,500 h.p., is stationed at Reval in winter, and assists vessels in and out if circumstances render such help needful. A narrow wooden jetty has been replaced by a broad stone pier, and a new stone pier built. The length of the stone piers is 900 fathoms, with a depth of 22 to 25 ft. The length of the western wooden jetty is 300 fathoms, with a depth of 20 to 25 ft. There is a floating dry dock belonging to the Government capable of dealing with steamers up to 1,000 net reg. tons.

General Regulations.—According to the Custom House regulations, only steamers are allowed to have a fire on board in the harbour. Gunpowder, etc., must be delivered over to the harbour police.

On entering the harbour a vessel is boarded by the Custom House authorities, who examine the ship, seal up the hatches, and demand production of the vessel's documents. The attention of shipowners, agents, masters, and brokers is specially called to the regulations issued by the Russian Custom House concerning bills of lading (as non-compliance with these regulations means heavy fines, which must be paid by owners), and to the regulations issued by the new harbour authorities.

Harbour Authorities.—Since 1903 all harbours in Russia are under the control of a special Board, appointed by the Board of Management of Commercial Harbours, and of which the Government harbour-master is the head as well as chief executive officer. Masters of vessels are recommended to make themselves acquainted with the new regulations.

Loading and Discharging is done as quickly as possible if a vessel has to discharge or load "as customary," or "without delay"; but according to a resolution of the Reval Exchange:—

Vessels with goods on which duty has to be paid must be discharged in accordance with the instructions of the Custom House, consignees of the steamer not being responsible for delays owing to Custom House formalities or orders. Vessels with duty-free goods, or such goods on which duty is paid according to bill of lading weight (coal, for instance), need not be discharged faster than at the following rates:—

	Between October 1 and February 28.	Between March 1 and September 30.
Sailing ships, 40 tons per day.		
Steamers up to 500 tons net reg.	125 tons per day	175 tons per day.
„ from 500 to 800	150 „	200 „
„ from 800 and upwards	225 „	300 „

Vessels with goods for more than one receiver are entitled to land goods as fast as they can deliver them, for account and risk of consignees, should the latter not take delivery of them at once.

When no days are stipulated for loading, vessels are not entitled to claim shipment of more grain than the following quantities represent:—

Sailing ships, 20 lasts per day.
Steamers up to 500 tons net reg., 1,500 chets. per day.
„ over 500 „ „ 2,500 „ „

N.B.—In reality, steamers are loaded as fast as goods can be provided,

Russia—Reval (*continued*).

and dispatch is good, the above rates representing the minimum amount of work under the most adverse circumstances, the working hours in winter being very short.

Water, provisions, and coal are obtainable in any quantities, at moderate prices.

The attention of shipmasters is called to the fact that the lightship or Revalstone Reef is taken away in the autumn, and that the Nargen lighthouse then shows a red light instead of a white one. The lightship at Neckinen-ground at the entrance to the Gulf of Finland leaves her station about Christmas time (Russian), and returns to the station again at the end of March (old).

Pilotage.—There is no regular scale of payment for sea pilotage in and out; the pilots are paid, according to agreement, from 7 rbls. to 25 rbls. in or out, according to the season, weather, size of ship, etc. Before engaging any pilot, masters will do well to make an agreement with him, and ask for the production of his certificate countersigned by the Reval Exchange Committee, as there are some men who offer their services without being competent to take vessels in or out. **Harbour Pilotage** :—2 rbls. for vessels under 100 tons; 3 rbls. for vessels from 100 to 200 tons; 4 rbls. for vessels from 200 to 400 tons; 5 rbls. for vessels from 400 to 800 tons; 6 rbls. for vessels of 800 tons and upwards. **Mooring Boat** :—The harbour pilot provides a boat and men. There is no fixed charge, the harbour pilot getting from 6 to 25 rbls., according to the work done.

Port Charges.—Ice Dues :—10 cps. per last (2 reg. tons) for all steamers entering or leaving Reval between October 1 (old style; 14th new style), and April 17 (old style; 30th new style). **Sailors' Home** :—The Exchange Committee has opened such a home, and steamers contribute toward its expenses as follows: Vessels up to 500 tons, 1 rbl. each; vessels over 500 tons, 2 rbls. each. **Harbour Watchmen** :—In order to prevent theft on board steamers, carts, etc., the Exchange Committee maintains a staff of men for this purpose, and steamers with general cargo contribute as follows: Vessels up to 200 tons, 3 rbls.; vessels over 200 tons, 5 rbls. **Floating Crane** :—For landing packages, 3 cps. per poood up to 1,500 pds. per package; 10 cps. per pd. for packages over 1,500 pds. each. **Stevedore** :—Discharging—Coal, salt, sulphur, 35 cps. per ton; coke and bricks, 65 cps. per ton; shifting bunker coal, 75 cps. per ton; cotton, 40 cps. per ton; general goods, 45 cps. per ton. Loading—Oats, 3 cps. per chetwert; heavy grain and seed, $3\frac{1}{4}$ cps. per chetwert; oil-cake, embaled, 40 cps. per ton; oil-cake, in bulk, 50 cps. per ton; general goods, oil, etc., 50 cps. per ton; flax and dry skins, 75 cps. per ton; tow and wool, 75 cps. per 42 pds.; sleepers, 45 cps. per load; D.B.B., 150 cps. per std.; capbaulks, 180 cps. per tult. **Payment of Freight** :—Freight payable at Reval will be settled for at the exchange for 3 months' bills quoted on the St. Petersburg Exchange on the first exchange day after the vessel's arrival at Reval, unless something to the contrary be stipulated by charter-party or bill of lading. **Commission** :—The commission for encashing freight is 3 per cent. **Brokerage** :—Brokerage on freight engaged at Reval is 3 per cent., and vessels loading in Reval have further to pay 2 per cent. commission on the approximate amount of freight on goods loaded in Reval to the shippers of such goods, making 5 per cent. brokerage in all.

Russia—Reval (*continued*).**Pro Forma Charges** on a steamer of 1,101 net reg. tons :—

	Rbls. cps.
In and out-going declaration and stamps	12 00
Harbour and Government dues and receipt	220 50
Clearing pass and stamps	10 00
Ice-breaker dues, 10 cps. per last (2 reg. tons)	55 05
Sea pilotage in and out, 1 rbl. per foot each way	29 00
Harbour pilotage in and out	10 00
Mooring boat	8 00
Hire for the stages	15 00
Stamping inward bills of lading at 15 cps. each, and manifest	0 45
Petitions and stamps	3 00
Custom House watchmen	2 40
Gratuities to officials	5 00
Rubbish cart, 1 rbl. ; Sailors' Home, 2 rbls.	3 00
Exchange Committee's dues, $\frac{1}{2}$ cp. per ton	5 50
Cash	300 00
Stevedores' account	1,031 40
Telegrams, postages, petties, and stamps for broker's notes, etc.	6 00
Doing ship's business, £5 5s.	50 40

1,766 70 = £186 15s. 0d.

RIGA.

Riga, in lat. 56°58' N., long. 24°8' E., is situated on the eastern bank of the river Dvina, about 7 miles from its mouth.

Population.—282,230.

Imports.—Coal, salt, chalk, iron, dye-wood, wines, spirits, coffee, cottons, woollens, fruit, herrings, oil, and machinery.

Exports.—Oats, barley, rye, wheat, linseed, hemp seed, wool, hides, leathers, eggs, butter, deals, sleepers, timber, flax, hemp, oil-cakes, etc.

Accommodation.—By constant dredging the depth on the bar has been brought up to 25 ft. with normal water, and this depth is maintained throughout the entire river up to the loading berths at Riga town.

Bolderaa is situated on the left bank, at the mouth of the river. Incoming and out-going vessels report and clear here. There are discharging places for coals at Bolderaa, and a good deal of timber is shipped in the Bolderaa Bight.

Old Muhlgaben, on the right bank of the river, is the principal place for loading timber. Vessels anchor here in 25 ft. of water, with the stern in towards the bank of the river ; they get their stern ropes ashore, and lie at right angles to the stream. The holding ground is not good, and with strong S.W. to N.W. winds vessels often drag their anchors.

New Muhlgaben is situated in a creek above old Muhlgaben ; at the entrance to the creek there is 25 ft. of water. This is the principal place for discharging coal and iron.

Poderaa, on the left bank of the river, about half-way between Bolderaa and Riga town, is the principal place for discharging ballast. Chalk cargoes are discharged at a quay. Coal steamers anchor in the bight and discharge into lighters. Poderaa is a safe place, and the holding ground is good. The depth of water alongside the quays is 20 ft.

Riga Town.—Steamers moor alongside the quay in 22 ft. of water. Grain, flax, and general goods are shipped at the town quay, which is lighted by electricity. There are also discharging berths for coal. Dispatch in loading is, as a rule, good. Of late years a good deal has been done to improve the river channel ; new granite quays have been built and are well lighted.

Russia—Riga (*continued*).

Andreasholm is on the right bank of the river. Here there is a quay with large coal discharging berths having a depth of 20 ft. alongside. There is a large grain elevator, and cold store. Steamers load perishable goods direct from the cold store.

New Harbour No. 1 (usually called Export Harbour). By dredging, new harbour has been formed on the right bank of the river, just below the Andreasholm. The length of the quay is 600 ft., but it is still being lengthened along the river bank. The depth of water alongside the quay is 24 ft. Large warehouses are situated alongside the quay belonging to the Exchange Committee and the railway company. General cargo, sawn goods, and eggs are chiefly loaded here.

Opposite Riga town is **Ballastdam**, where ships load timber. The depth of water is 20 ft. A pilot is necessary, and the payment of pilotage is compulsory. Small repairs can be executed at Riga.

Time Signals.—Chronometers can be checked here. A black ball is hoisted half-way up the mast, on the Sailor's Home, 15 minutes before the signal. The ball is hoisted close up 5 minutes before, and dropped at 1 p.m. Pulkowa Observatory mean time, equal to 22 h. 58 m. 41·3 s. Greenwich mean time, and 0 h. 35 m. 3·3 s. local mean time.

Pilotage is compulsory. From the sea to the discharging berth and then to the loading berth and back to the sea, 6 cps. per net reg. ton. Every shift in the river 2 rbls. extra.

Port Charges.—Harbour Dues:—In and out, whether in ballast or with cargo, 20 cps. per net reg. ton. Steamers coming from another Russian port only pay harbour dues in the first port entered.

Pro Forma Charges on a vessel of 696 net reg. tons, ballast in and cargo D.B.B. out:—

	Rbls.	cps.
Harbour dues	139	20
Pilotage	41	76
Address money	182	00
Customs clearance	91	00
Customs permits, etc.	6	35
Stevedore	750	00
Stages	18	00
Towage, 100 rbls. to 150 rbls. (say)	125	00
	1,353	31 = £143 1s. 1d.

Pro Forma Charges on a vessel of 841 net reg. tons inwards, with a cargo of coal, and outwards mixed cargo of linseed, oil-cake, flax, and deck-load wood:—

	Rbls.	cps.
Harbour dues	139	20
Customs clearance	91	00
Customs permits, etc.	16	00
Address money	182	00
Pilotage	41	76
Extra pilotage for shifting	7	00
Stevedore, discharging	550	00
Stevedore, loading	690	00
Towage, 100 to 230 rbls. (say)	165	00
Stages	34	00
	1,915	96 = £202 10s. 6d.

*Russia.***ROSTOV-ON-DON.**

Rostov, in lat. $47^{\circ}12' N.$, long. $39^{\circ}42' E.$, is situated on the river Don at its junction with the Temernik, 25 miles above its entrance into the Sea of Azov.

Population.—Including Nahitchewan, 165,011.

Imports.—Agricultural machinery, brick tea, locust beans, resin, nuts, olives, coffee, carbolic acid, olive oil, pepper, wax, and manufactured goods.

Exports.—Wheat, rye, barley, oats, linseed, rape seed, oil cake, bran, flour, wool, etc.

Accommodation.—The water on the bar at the mouth of the Don varies from 2 to 9 ft., according to the wind. There are about eight private wharves along the river side. On one of these there is a crane to lift from 20 to 30 tons.

There is a shipbuilding yard for light draught vessels, containing three slips, with available docking length from 150 to 200 ft., where repairs can be efficiently executed. Vessels to 700 tons are built, and the slips can take ships to this size.

General Regulations.—Disputes have been very numerous between shippers and shipmasters during recent years. A fertile cause of dispute was found in Clause 15 of the Berth Note, wherein it is stated that : "Captains to declare in writing on arrival at loading port, or at least three days before the time for sending the cargo alongside has expired, the quantity of cargo required." Masters have been accustomed to supply the cubic capacity and tonnage of their vessels. Shippers refused to accept this declaration as sufficient, and so the following amplification was agreed upon : "Any captain who shall inform the shipper as to the loading capacity of his steamer in tons and cubic ft. (d.w. . . . tons and cubic capacity) shall be held to have fulfilled his obligations, but only in those cases where the shipper (not later than three days before the expiration of the lay-days) shall not have stated in writing to the captain the sort of grain which he is going to ship. Should the shipper have given the said written notice to the captain, then the latter is obliged to state in writing the exact quantity of grain he can take in tons. If this be not done, then the shipper will be freed from responsibility for any shortage in weight, and the expenses for carriage of extra cargo must be borne by the captain." Steamship owners would do well to consider this clause carefully before signing the charter party.

Pilotage.—Not compulsory.

Port Charges.—**Bar Dues** :—Vessels—1 rbl. per 1,000 poods ; goods, 3 rbls. $12\frac{1}{2}$ cps. per 1,000 poods. **Port Dues** :—Vessels, 10 cps. per reg. ton, for countries with commercial treaty ; 2 rbls. per reg. ton for countries without commercial treaty ; goods, 25 cps. to 1 rbl. per pood.

RUSANOVA.

Rusanova, in lat. $66^{\circ}10' N.$, long. $44^{\circ}20' E.$, is situated 16 miles N. of Tezen.

Export.—Timber.

Accommodation.—At low tide there is 19 ft. of water in the channel abreast of the quay, and at high water 38 to 44 ft., according to

Russia—Rusanova (*continued*).

height of tide. There is no bar, and beyond Masslynnoi Nos, the pilot station and beacon, 7 miles away, is the deep sea. The approach of ships is signalled from the beacon, and two steam-tugs are always available for towing ships at a moderate cost.

The discharging of ballast into the roads or river is strictly prohibited.

Pilotage.—From the mouth of the river to the loading place opposite the saw-mills, a distance of nearly 10 miles, inwards, £2; outwards, £3.

Port Charges.—**Lastage Dues**, including stamps, etc., 1s. per last. **Pram Hire**, to discharge ballast, including steam-tug for bringing to and taking off, on one-third of ship's tonnage, 1s. 6d. per ton. **Towage**, if required, inwards, 10d. per ton; outwards, 1s. per ton. **Labour**:—2s. 9d. per man per day.

ST. PETERSBURG.

(See **Cronstadt and St. Petersburg**, p. 466.)

SALIS.

Salis, in lat. 57°47' N., long. 24°23' E., is in the Gulf of Riga.

Export.—Timber.

Accommodation.—The anchorage is in 13 ft., about a mile off the town. The bottom is rocky. Cargo is brought off in lighters. Vessels of larger draught usually load at Haynaseh or Ainej, about 6 miles N. of Salis, from which latter place the cargo is brought in lighters. The reefs off shore form a small natural harbour, where vessels can load to 10 ft. and then proceed to the outer roadstead, about 2 miles off, and there load to 18 ft. There is no shelter, and the holding ground is bad, but vessels with good ground tackle can ride out a gale in comparative safety. Ballast is usually thrown overboard outside.

The stowage must be done by ship's crew, as labourers are difficult to get. Beef is the only article of food to be obtained, and fresh water is scarce.

Pro Forma Charges on a vessel of 234 tons reg., ballast in and cargo out, drawing 15 ft. when loaded:—

	S. rbls.	cps.
Custom dues	113	99
Expedition and declaration	9	30
Address commission	25	00
Charter party	3	00
Pilotage	10	00
Labourage	8	00

169 29 = £17 17s. 10d.

SHELPINA BAY.

Shelpina Bay, in lat. 69°3' N., long. 36°30' E., contains a cluster of low islets.

Accommodation.—The anchorage is 150 yards S.E. by S. of the Southern Island, and the same distance from the mainland on each side in 6 or 7 fathoms of water, with a bottom of shells; sheltered from all winds. There is not much room to swing, therefore warps must be made fast astern. Fishermen can always be found here to act as pilots.

SKADOVSK.

Skadovsk, in lat. 46°6' N., long. 32°53' E., is situated on the N. side of the Bay of Djarilgatsky.

Russia—Skadovsk (*continued*).

Export.—Grain.

Accommodation.—Steamers loading here can obtain good shelter within a mile of the shore, in 19 ft. of water, and at a distance of 2 miles from land there is a depth of over 25 ft. Cargo is brought off in barges, which are loaded alongside a jetty at which there is 7 ft. of water. The grain is loaded into the barges in bags, and these are slung on board by the steamer's gear. This port is well protected, and loading is seldom, if ever, interfered with by high seas.

Pilotage.—See **Horli**.

Port Charges.—For **Lastage** and **Pood Dues**, see **Russia**. Stevedoring, provisions, etc., are the same as at **Horli**.

SOROKA.

Soroka is in lat. $64^{\circ}40'$ N., long. $34^{\circ}30'$ E.

Vessels bound to the Gulf of Onega ports must be particularly cautious after passing Jijginsk Island. If the weather is thick or foggy it is advisable to anchor under the S.W. end of Jijginsk Island in 8 to 10 fathoms of water, about 2 or 3 miles from shore. The island must be rounded at not less than 4 miles from the N.E. to the W. sides, owing to the dangerous nature of the coast.

Population.—25,523.

Exports.—Mill-sawn timber, deals, battens, boards, staves, etc.

Accommodation.—Vessels come to anchor in Soroka roads, about 4 to 5 miles below the village and saw mills, in from 4 to 5 fathoms of water, a blue clay bottom making a good holding ground. Vessels load timber from the saw mills. Cargoes are brought alongside in lighters by tugboats, each lighter carrying 70 to 90 St. Petersburg stds. There is no lighterage charge. High water is at full and new moon, at about 6 o'clock; the ordinary rise of the tide is 3 to 4 ft.; spring tide up to 6 ft. Good fresh water is obtainable from the saw-mills tug; water is pumped into the ship's tanks for a moderate charge. Provisions may be obtained from a local ship-chandler at moderate prices. No coal can be obtained. Roads and gulf are usually open about the middle of May, but the passage from the ocean to the White Sea, some years, is blocked with ice till the middle of June, or even later. Navigation closes between October 15 and November 1, but shipping usually finishes by the end of September or the beginning of October.

The best route to Soroka is across to Great Shoujmuia, passing close along its north-west side to avoid a 6 foot rock which bears about N.W. by N. $2\frac{1}{2}$ miles from Shoujmuia lighthouse (not N. by E., as shown on English charts). A course should then be steered to the S.S.W., to avoid three shoals lying to the westward of Shoujmuia, and on which is only 2 to 7 ft. of water. Clear weather is necessary when navigating in this locality, as it is by landmarks principally that pilots conduct ships to Soroka. Tides run strong in crossing the gulf, and on the vessel's broadside, ebb and flow. Vessels in the roads lie quite exposed to easterly winds, which blow long and strong during the months of June and the first part of July, but beyond delays incurred in loading from this cause the roads are safe.

Russia—Soroka (*continued*).

Pilotage.—Compulsory. From Cape Orloff to Soroka and back again, 16 cps. per reg. ton (or 6 cps. in and 10 cps. out).

It is highly imprudent for shipmasters to venture past Cape Orloff Letni without a pilot. There is a pilot station for the Gulf ports on Cape Orloff Letni, on a low projecting point, which extends out about a mile from the high land at the back; this point must have a berth given to it of about $1\frac{1}{2}$ miles, and on no account should a vessel round-to in the bay to the southward, as the water there shoals rapidly. Twelve to fifteen pilots are stationed on the cape from the opening of navigation until the close, and conduct ships to Onega, Soroka, or other ports. Pilotage is levied at the different loading places, whether pilots are employed or not.

Port Charges.—**Lastage**:—20 cps. per reg. ton. **Custom's Officer** remaining on board during the loading at 40 cps. per day, and an additional 75 cps. for stamps. **Address Commission**:—Including clearance, 60 cps. per St. Petersburg std. loaded. **Ballast Charges**:—Only for sailing vessels, 30 cps. per ton. **Towage**:—Moving in the harbour, from 10 to 15 rbls. **Stevedores**:—Loading and stowing deals, etc., into steamers, 1 rbl. 50 cps. to 2 rbls. per St. Petersburg std. Most vessels stow more here, as the timber is very evenly cut and well seasoned. Sailing vessels are usually stowed by their crews, sometimes having the help of one or two foremen stevedores, at the rate of 20 to 25 cps. per std.

Custom of the Port of Soroka.—Cargoes in lighters are tallied at the saw mill, and the mate's receipt granted before sending the lighter out; this is simply for insurance, as the goods are always insured in craft, and the ship's master does not run any risk of the goods being lost or damaged before coming alongside on their voyage, and does not cause any trouble to ship, except sending the mates ashore for tallying, and there is no difficulty in that as the harbour tugs are running in and out every tide. The loading is usually stopped in wet weather or heavy sea. If any portion of the goods are washed off the lighter or damaged, corresponding remarks are made on the bills of lading when signing. Dispatch considerably depends upon the weather and the number of vessels loading at a time, as when the latter is large there is a difficulty in getting sufficient labourers for stowing, though there is never want of cargo alongside, as the saw-mill has 35 lighters carrying 70 to 90 stds. each. Dispatch varies from 70 to 100 stds. per working weather day per vessel. Work is allowed on Sundays and holidays, if suitable for shippers and vessels. Mail communication is regular; coast mail-boats run weekly. Telegraph station in the village is close to the saw-mill.

TAGANROG.

Taganrog is in lat. $47^{\circ}13'$ N., long. $38^{\circ}53'$ E.

Population.—62,000.

Imports.—Dried fruits, oil, wine, coffee, tobacco, liquors, carobs, cotton and woollen goods, agricultural machinery, fresh fruits, nuts, olives, cement, pig-iron, and other manufactured iron, jute sacking, tea, paint, etc.

Exports.—Wheat, rye, barley, linseed, rape-seed, oats, maize, wool, oil-cake, bone dust, aniseed, tallow, coal, caviare, macaroni, iron, coal, salt, butter, and flour.

Accommodation.—There is no regular port or shelter for foreign shipping at this place, but there is a harbour for coasting vessels, with a depth

Russia—Taganrog (*continued*).

of 12 ft. Vessels are discharged and loaded at anchor in the open roadstead, at a distance of from 20 to 30 miles from the town. The depth of water is exceedingly variable, being dependent on the direction and force of the winds. Not more than from 18 to 23 ft. can be reckoned on at the usual anchorage ground, and from 10 to 12 ft. at the loading pier, and when blowing hard from the E. considerably less. With a strong southerly wind the depth of water at the pier is from 12 to 14 ft., and 24 ft. or more in the roadstead. The anchorage is good, with a soft bottom. The patent anchor is not suitable for muddy bottom. Steamers should always lie with both anchors down. Ships rarely suffer damage by taking ground whilst loading. With strong N.E. gales the depth of water in the roadstead is often reduced as much as 7 ft.

Between the floating lights of Pestchanny and Beglitzki is situated the usual anchorage for vessels drawing 18 to 23 ft. To the west of the black buoy, at the extremity of Greek Bank, is the usual anchorage for large vessels in ballast, and small vessels loaded. From this buoy the course is E. 4 miles, to arrive at the red buoy at the extremity of the Petroushin Spit, in 12 ft. of water, keeping it to port. South of this buoy is the anchorage for small vessels, the average depth being 15 ft., with the town bearing N.N.E.

During thick or foggy weather the lead must be kept continually in use. When the vessel is in the channel, the bottom is invariably muddy; when on a bank, the bottom is hard and sandy. The anchorage during winds from the N.E. and S.W. is open to a heavy sea.

Several steamers, belonging to the ship-chandlers, now ply daily to the roadstead, affording greater facilities to masters of ships for coming on shore and getting off to their vessels than formerly existed. The average price of steam coal, put on board steamers in the roadstead, is from 25s. to 30s. per ton. Provisions are cheap.

There is one hand crane and two steam cranes on the quay. A wet dock is in course of construction for barges, lighters, and small craft.

Quarantine.—The quarantine station is at Kertch. Ships are not permitted to proceed until after having been visited by the health officers.

Customs Regulations:—Every vessel is visited at Kertch by the Custom House authorities. The master's declaration is taken of the goods and provisions on board; those not manifested will be confiscated. He must also declare how many bundles of empty grain sacks, their exact number and weight, otherwise he will be fined. Vessels bringing inward cargoes are bound to deliver to the Customs officer visiting the ship a correct manifest of all the goods on board, signed by the master; and if at the output any extra goods or deficiency of cargo be ascertained, the vessel is subjected to a fine. If a manifest, bills of lading, or declaration as to what the cargo consists of, be not given in at Kertch, a very heavy penalty is exacted. After these formalities, a sealed packet, with the customary reports addressed to the Custom House at Taganrog, is delivered to the master, with a pass which must be delivered at the guardship; the vessel is then at liberty to continue her voyage. For proceeding without the necessary Kertch clearances a heavy penalty is exacted.

Port Rules.—A guardship is now stationed in the roadstead of Taganrog, and on arrival the ensign must be hoisted at the foremast head, when a Custom House officer will visit the ship, and give a permit for loading or

Russia—Taganrog (*continued*).

discharging. No vessel bringing inward cargo is allowed to commence loading previous to being visited by an officer of the guardship, to ascertain that the holds are clear. Any vessel arriving with inward cargo must, previous to being able to obtain her outward clearances, provide the Custom House with an approved guarantee of a resident merchant or agent, who will hold themselves responsible for any fines to which the ship may hereafter become subject, under the guarantee for short or extra goods delivered.

Nearly all vessels entering this port to load carry water ballast, but those arriving in ordinary ballast are not obliged, as formerly, to land the same, which can be thrown overboard at a spot marked out below the Greek Bank, on the southern side of the Sea of Azof, in 12 to 14 ft. of water.

Pilotage.—A charge of 7 cps. per last is always made by the Custom House at Kertch for pilotage both ways through the Yenikalé Straits, on every vessel proceeding to and from the Azof, whether a pilot is taken or not.

Port Charges.—**Entrance Dues** :—10 cps. per reg. ton. **Clearance Dues** :—10 cps. per reg. ton. **Lighthouse Dues** :—1 cp. per reg. ton. **Charge for Guardian** :—40 cps. per day from and to Kertch.

Pro Forma Charges on a steamer of 7,300 tons :—

	Rbbs.	cps.
Lastage, anchorage, and light dues	617	27
Declaration and expenses		
Stamped papers and sundry		
Guarantee for sealed provisions and bill of lading }	57	40
Petition for removing seals from sacks		
Petition respecting night work		
Expenses on sealed provisions and stores }		
To Custom House guardian for superintending night work, and for Kertch	15	85
Russian and Turkish bills of health.	5	00
British Consul's fee, 10s.	4	80
Drosky to Custom House	5	00
Superintendence in the roads	15	00
Custom House fee, £8 8s.	79	20
Telegraph, telephone, and petty expenses in connection with clearing and berthing steamer	38	50
Church contribution	3	00
Stamps for charter parties, bill of lading, accounts, etc.	31	20
Manifest, bill of lading, and plans of the cargo	10	00
School contribution	3	00
Bourse committee	5	00

890 22 = £94 2s. 0d.

TERIBERSKOI BAY.

Teriberskoi Bay is in lat. 69°12' N., long. 34°50' E.

Imports.—Salt and coal.

Export.—Fish.

Accommodation.—The inner bay (Lodeinoe Bay) is two-thirds of a mile wide, and extends a mile to the south, terminating with a broad sandy bank across the mouth of the river. In Lodeinoe Bay there is nowhere less than 30 ft. of water. Large vessels anchor in 6½ fathoms, in a line between the islet and E. point of the bay; the bottom is of mud and sand. There are no pilots, but fishermen can always be found to act as such.

Russia.

THEODOSIA.

Theodosia, in lat. $45^{\circ}1' N.$, long. $35^{\circ}21' E.$, is situated at the foot of a mountain forming the south-western angle of a large and deep roadstead.

Population.—30,000.

Exports.—Grain, seed, and oil-cake.

Accommodation.—The port is sheltered from the southerly and westerly winds, but the roadstead is more or less open to the N.N.E. and E. winds. The new harbour, where all vessels now load and discharge in safety, has a uniform depth of 24 ft., nine berths for foreign steamers, and one berth where steamers drawing up to 26 ft. can load. Steamers arriving from abroad may anchor inside the harbour to obtain pratique. The quarantine boat goes off to the steamer to give pratique. It is not necessary for the captain to go ashore. After receiving pratique the pilot boards the steamer and takes her into the harbour, and moors her at a loading berth, where the Custom House officials come on board and give clearance. Theodosia is the quarantine station for all steamers which come from infected places to Sevastopol, Theodosia, Novorossisk, Poti, Batoum, and all ports on the Sea of Azof. Steamers from infected ports must anchor outside the harbour opposite the quarantine station, where a yellow flag is always flying. Immediately on arrival the captain must go ashore, taking with him all bills of health, register, and log-book. Steamers are not generally detained longer than 24 hours at the quarantine station, weather permitting.

Pilotage.—50 rbls. per steamer, both in and out; mooring boat, 10 rbls.; shifting to another berth, 20 rbls.

Port Charges.—**Port Dues:**—Charged on the net reg. tonnage, 10 cps. per ton inwards, 10 cps. outwards. No extra charges for anchorages, lights, or quay berths. **Quarantine Dues:**—1 cp. per reg. ton. **Interpreter:**—5 rbls. **Stevedoring:**—For trimming grain, 3 cps. per chetwert; filling and stowing bags with grain, 5 cps. per bag; stowing oil-cake, 40 cps. per ton. **Discharging:**—General cargo, 60 cps. per ton. **Labourers:**—From 2 rbls. 50 cps. to 3 rbls. per day. **Provisions:**—Beef from 11 to 15 cps. per Russian pound; flour, 10 rbls. per sack (180 lb.); bread, 4 to 5 cps. per Russian pound; potatoes, 40 cps. per pood (36 lb.); other vegetables are scarce.

The rule of the port is, that lay-days commence to count the day after the steamer is in her berth.

Pro Forma Charges on a steamer of 1,668 net reg. tons:—

	Rbls.	cps.
Port dues	333	60
Customs, soldier on board, 12 days at 40 cps.	4	80
Customs, stamps on documents	9	60
„ life-boat fund (voluntary)	5	00
Quarantine dues and interpreter, 5 rbls.	21	68
Harbour facilities	25	00
British Consulate, articles	1	25
Turkish bill of health	5	00
Telegrams, 23 rbls. 40 cps.; postages, 6 rbls.	29	40
Drosky hire and petties	18	80
Stevedore, 27,975 chetwerts at 3 cps., 839 rbls. 25 cps.; stages, 45 rbls.; rigging stages, 6 rbls.	890	25
Stevedore, boat hire, mooring, and unmooring	10	00
Ship-chandler	187	56
Pilotage, in and out	50	00
2 per cent. commission on freight, £1,693 13s. 7d. = £33 17s. 6d.		
at 9 rbls. 30 cps.	315	03
Agency fee, £8 8s., at 9 rbls. 30 cps.	78	12

1,985 03 = £209 16s. 7d.

Russia.

UMBA.

Umba is in lat. 66°38' N., long. 34°20' E., in the Consular district of Archangel.

Population.—900.

Exports.—Deals, battens, and boards.

Accommodation.—There is a depth at low water of 25 to 35 ft. alongside the quay. The tide rises from 4 to 7 ft.; average tonnage of vessels using port, 1,786.

Pilotage.—Compulsory. 7 cps. per reg. ton for steamers and sailing ships.

Port Charges.—Towage:—For sailing ships, if required, 40 rbls. in and out. **Boat Hire:**—Free. **Ballast:**—For sailing ships, 30 cps. per ton.

Labour:—Loading deals, battens, boards, deal ends, 1 rbl. 50 cps.; strips, 1 rbl. 75 cps. **Address Commission and Clearance:**—60 cps. per std. loaded.

Pro Forma Charges on a steamer of 1,325 tons reg., ballast in and cargo of 848 stds. out, drawing 23 ft. loaded:—

	Rbls.	cps.
Harbour dues, 20 cps. per reg. ton.	265	00
Stamps	2	10
Pilotage, in and out, 7 cps. per reg. ton	92	75
Address commission and clearance, 60 cps. per standard	508	80
Stevedore's charges, 1 rbl. 50 cps. per standard	1,272	00
	2,140	65 = £226 5s. 7d

WINDAU.

Windau, in lat. 57°22' N., long. 21°36' E., stands at the mouth of the river of the same name.

Population.—About 10,000.

Imports.—Coal, agricultural machinery, general goods, etc.

Exports.—Railway sleepers, pit-props, deals, boards, cap-baulks, flax, Siberian butter, oats, wheat, and other grain, oil-cake, etc.

Accommodation.—The entrance is formed by two curved wooden jetties, the northern one being 6,800 ft. long and the southern 4,900 ft. long. They stand 3,580 ft. apart, with an entrance 875 ft. wide, and enclose the pier or outer harbour. Lighthouses are now (1908) in course of construction at the end of these jetties, and, when completed, the lights will be visible for about 10 miles. There is at present about 24 to 26 ft. of water at the entrance of the harbour. The depth of the water within the harbour is 24 to 30 ft. There is a quay 5,600 ft. long on the left bank of the river with a water depth of from 16 to 20 ft., and on the right bank a quay 3,500 ft. long, with a water depth of 20 to 30 ft. The entrance to the harbour never becomes frozen over. Pilots can always be had and may be depended on. A tugboat can be obtained if desired. The roadstead is commodious, with from 6 to 7 fathoms of water. Windau is connected with Moscow and Siberia by rail, and is the most convenient station for exporting the merchandise of these places. The railway company has erected a quay, 3,500 ft. in length, with Custom House, elevator, and warehouses, the elevator, holding as much as 25,000 tons of grain, being able to load three steamers simultaneously. The river Windau is navigable over a great portion of its course. Great wood stocks are on both sides for about 6 to 7 versts (4 to 5 miles).

Russia—Windau (continued).

up the river, and steamers are loaded direct at the stocks, as the depth of water there is sufficient. Small repairs to hull and machinery can be done by a private firm.

Pilotage.—70 cps. per foot.

Port Charges.—Harbour Dues :—20 cps. per net reg. ton. **Tug-boat** :—30 to 60 rbls. **Address Commission** :—40 cps. per last (80 cubic ft. for wood). **Bridge Money** :—2 rbls. 80 cps. **Stevedore** :—120 to 135 cps. per std. ; 35 cps. per load sleepers. **Lifeboat Dues** :—1 cp. per net reg. ton.

YEISK.

Yeisk is in lat. 46°41' N., long. 38°17' E., on the eastern shore of the Sea of Azof.

Population.—36,000.

Exports.—Grain, seed, oil-cake, and wool.

Accommodation.—The “Liman” or estuary is a small natural harbour, well protected, and has a depth of water of from 12 to 14 ft. Yeisk is built on the western spit at the entrance to the “Liman.” The usual anchorage is outside, in 16 to 17 ft. ; good holding ground about 3 miles off shore, but steamers of 19 to 20 ft. draught, with full cargo, are obliged to anchor about 6 to 7 miles off shore. Steam barges are used for loading the steamers in the roadstead. A quay has been erected here.

Pilotage.—From Kertch and back, about 34 rbls.

Port Charges.—Port Dues :—About 15 cps. per ton. **Light Dues** :—14 rbls. 30 cps. **Broker** :—Clearance, etc., £5 5s. **Stevedore** :—Loading and discharging, from 30 to 40 rbls. per 1,000 chetwerts, according to the season. **Provisions** :—Beef, 4 rbls. 50 cps. to 6 rbls. per pood ; mutton, 7 to 8 rbls. per pood ; fowls, from 1 to 2 rbls. a pair.

Pro Forma Charges on a steamer of 561 lasts :—

	Rbls. cps.
Lastage	56 10
Light dues	14 30
Anchorage at Yeisk	39 27
Custom House soldier	4 40
Sundry	0 60
Quarantine dues	11 22
Custom House clerk	3 00
Anchorage at Kertch	31 42
Pilotage	8 00
	<hr/>
	168 31 = £17 15 10

N.B.—All the above dues are received by the Custom House.

Declaration	5 00
Stamped paper and stamp duty	4 00
Guarantee	3 00
Drosky to Custom House	5 00
Petition respecting night work	3 00
Custom House guardian for superintending night work	2 00
	<hr/>
	22 00 = £2 6 6
Entering and clearing	5 5 0
	<hr/>
	£25 7 4

These are charged by the shipbroker.

FINLAND.

This Russian province retains its old currency, based upon a gold standard. The gold coins are 20 and 10 markka pieces. The markka is divided into 100 penni pieces. 25·225 markka=£1 stg. The metric system of weights and measures is universally employed in Finland. During 1907 the total trade of the province amounted to £25,780,600; being made up of imports, £15,172,600, and exports, £10,608,000.

General Regulations.—Vessels for Finnish ports do not require a bill of health, and those having a measurement bill in English regulations do not need the Finnish.

The Russian Government has given notice that the following signals will be made from such light-vessels in the fairways of the Gulf of Finland as carry pilots, in answer to signals for the assistance of a pilot :—

BY DAY.

1. As signal that a pilot is on board the light-vessel and will put off, the flag indicated by the letter C of the International Code of signals will be shown.

2. As signal that there is no pilot on board, or that from some cause he cannot leave the light-vessel, the flag indicated by the letter D of the International Code will be shown.

AT NIGHT OR IN THICK WEATHER.

1. As signal that a pilot is on board and will put off, an alternating *red* and *white* light will be shown with the pilot light.

2. As signal that there is no pilot on board, or that from some cause he cannot leave the light-vessel, two *white* lights, placed vertically, will be hoisted at the mizzen gaff.

Custom House Regulations.—The following fees are charged in all Finnish ports :—

Last Money :—10 penni per reg. ton (only charged in the first port arrived at).

Light Dues :—44 penni per reg. ton on vessels entering with cargo, and 22 penni per reg. ton when in ballast. The same charge is again made on vessels leaving.

Expedition Fees are charged for vessels measuring :—

80 to 120 reg. tons . .	10 marks.	600 to 700 reg. tons . .	65 marks.
120 „ 160 „ . .	12 „	700 „ 800 „ . .	75 „
160 „ 200 „ . .	15 „	800 „ 900 „ . .	85 „
200 „ 250 „ . .	20 „	900 „ 1,000 „ . .	95 „
250 „ 300 „ . .	25 „	1,000 „ 1,100 „ . .	110 „
300 „ 350 „ . .	30 „	1,100 „ 1,200 „ . .	125 „
350 „ 400 „ . .	35 „	1,200 „ 1,400 „ . .	150 „
400 „ 500 „ . .	45 „	1,400 „ 1,600 „ . .	175 „
500 „ 600 „ . .	55 „	1,600 „ 1,800 „ . .	200 „

Above 1,800 reg. tons, 225 marks.

Vessels entering from another Finnish port or a Russian Baltic port are only charged half the expedition and light dues.

Russia.

ÅBO.

Å bo, in lat. $60^{\circ}32'$ N., long. $22^{\circ}17'$ E., is situated on the river Aurajoki, about 3 miles from its mouth, and 50 miles from the open sea, in the Gulf of Bothnia. The town is built on the mainland; the intervening 50 miles is an archipelago.

Population.—43,680.

Imports.—Salt, salt-fish, pig iron, manufactured iron, coal, coke, cotton, machinery, sugar, and general colonial produce.

Exports.—Timber, bar iron, beef, oats, rye, pork, butter, and game.

Accommodation.—The entrances from the sea are four, viz. :—Enskär, Degerby, Utö, and Hangö; the two first are used chiefly by vessels coming from Sweden and the north, the third by vessels coming through the Sound, and from Lübeck and Riga, the fourth by vessels coming from Reval, St. Petersburg, and Cronstadt. This port is connected by rail with St. Petersburg, and is open much later than any of the others. All the passages have lighthouses which indicate the entrances. During a prevalence of contrary winds two powerful steam-tugs are generally on the look-out at one or other of the entrances. Pilots, who are indispensable, are to be had at all four entrances. The anchorage is excellent and safe, in about 20 ft. of water, but vessels cannot get up to the town that draw more than 12 or 14 ft., depending upon the prevalence of easterly or westerly winds. As the bottom is muddy, and there are no tides, there is no danger when taking the ground. Vessels of $23\frac{1}{2}$ ft. draught can navigate the channel from the sea to Åbo with the water at its ordinary level. The anchorage for large vessels is at **Beckholmen**, about $2\frac{1}{2}$ miles from the town, and small steamers are running, nearly every hour in the day, there and back at low rates. There are plenty of lighters to be had at moderate rates, the payment of lighterage depending upon the terms of the charter. The owners of the cargo have to pay lighterage when the bill of lading is signed, "as far as she can safely float;" the ship pays when the bill of lading is signed, "for delivery to Åbo town."

There are several places in the neighbourhood, chiefly saw-mills, where timber is loaded; for instance, on the islands of Pargas, Attu, Levo, Qvidja, and Harvarö, all have about 19 to 20 ft. of water up to the mills. On the island of Kimito there are also several places with a depth of water from 16 to 20 ft., Ströma, Dahlsbruk, Tykö, Mathildedal, and Skinnarvik are the chief, while on the mainland there are Hakkala, Wartsala, and Nådendal. Högsar, on the island of Nagu, is also a place for loading timber, with about 15 ft. of water. All Custom House business, with the exception of Mariehamn, is transacted at Åbo. The merchant fleet belonging to the town and district represents about 25,000 tons, and, besides one or two rather extensive shipbuilding establishments, there is a patent slip capable of taking up a ship of 1,100 tons burden.

There is railway communication with Helsingfors and St. Petersburg, and steam-boat communication with Stockholm, St. Petersburg, Uleåborg, Lübeck, Copenhagen, Hull, Hamburg, and London.

General Regulations.—Ballast must be discharged alongside the quay at 5*d.* per ton, and is obtainable at 10*d.* per ton.

The harbour of Åbo, which by the aid of two powerful ice-breakers is open to steamers during the winter, will next summer (1909) be deepened and

Russia—Åbo (*continued*).

extended by dredging, to enable steamers and sailing ships to load and unload direct at the quay, when drawing not more than 20 ft. of water. The port is also fitted with a derrick-crane lifting about 18 tons.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the Navigating School, 381 ft. above sea level, 6 minutes before noon, and dropped at noon, Åbo mean time. Åbo noon is 22 h. 30 m. 53·7 s. Greenwich mean time. The signal is only given on Mondays.

Pilotage.—Rates vary according to the draught and size of the vessel. For a vessel drawing 15 ft., 400 to 500 reg. tons, from Utö to Åbo, the rate is 137 mk. 50 p. (about £5 10s.).

Port Charges.—**Harbour Dues** :—20 p. per ton. **Steam-tug** :—To Åbo, from 250 to 300 mks. (£10 to £12). **Custom Dues** :—For a vessel of 400 tons, about 200 mks. (£8) clearing in and out.

Pro Forma Charges on a sailing vessel of 575 reg. tons :—

	Mk.	p.
Pilotage, 17 ft. 9 in. in	144	60
„ 16 ft. 9 in. out	138	70
Light dues, in	253	00
„ out	253	00
Port dues, in	115	00
„ out	115	00
Expedition fee, in	55	00
„ out	55	00
Clearance, in and out	50	00

1,179 30 = £46 15s. 10d.

Pro Forma Charges on a steamer of 870 reg. tons, arriving at Åbo town from Germany in ballast, and leaving for England with a full cargo of wood :—

	Mk.	p.
Pilotage, inwards, 14 ft. 9 in.	145	20
„ outwards, 18 ft. 8 in.	168	40
Harbour pilot	5	00
„ dues	348	00
Light dues and expedition fee	750	64
Declarations	50	00
Visitation	6	00
Telegrams, etc.	23	75
Stevedore	2,882	54
Clearance, in and out	125	00

4,504 53 = £180 3s. 7d.

BJÖRNEBORG.

Björneborg, in lat. 61°27' N., long. 21°49' E., is situated on the river Kumo.

Population.—13,000.

Imports.—Salt, iron, coal, and colonial products.

Exports.—Sawn wood, timber, tar, and grain.

Accommodation.—Räfsö harbour and Mantyluoto harbour together form the port of Björneborg. The harbours are $\frac{3}{4}$ mile apart. Räfsö harbour is on the island of Räfsö, 18 miles from Björneborg by river. There is a good anchorage for about 150 vessels in Räfsö roads, and it is from here that the larger vessels load and discharge their cargoes by means of lighters.

Russia—Björneborg (*continued*).

Smaller vessels use the quayside, where the depth is 10 to 12 ft., with a length of 1,600 ft. The depth at the entrance of the port is 28 ft. Vessels entering obtain pilots off Säbbskär, about 10 miles distant; going out, from Kallo, opposite Räfsö. Mantyluoto harbour is on the south side of the Kumo river, and is connected with Björneborg by railway (14 miles). Vessels drawing 20 ft. can discharge and load alongside the quays (950 ft. long), where there is a crane with lifting power to 35 tons. The railway runs on to the quays. The harbour is open till late in the winter, and is sheltered from all winds and has a good holding ground. Steamers are discharged day and night, and get quick dispatch. Large Newcastle coal can be supplied at 27s. per ton into bunkers from the pier. There are several slips for vessels up to 100 tons and a shipbuilding yard.

Pilotage.—The pilot tariff is now revised, and is based on a vessel's tonnage, displacement, and distance piloted; for example, a steamer of 700 reg. tons. coming in to Mantyluoto, takes a pilot off Säbbskär (10 miles), and drawing 10 ft., pays 28 mk. 10 p. A sailing vessel, bound for Räfsö, of 900 reg. tons, and drawing 20 ft., piloted off Säbbskär (10 miles), pays 52 mk. 20 p. From September 15 to May 10, 25 per cent. additional pilotage is charged.

Port Charges.—Harbour Dues:—Sailing vessels above 19 reg. tons, 30 p. per ton. Steamers, first and second voyage, 30 p.; succeeding voyages during the same shipping season, 15 p. per reg. ton. **Tonnage Dues:**—10 p. per reg. ton, paid only once a year, and in the first Finnish harbour entered. **Light Dues:**—Vessels coming from foreign ports, with a cargo, 44 p. per reg. ton; from Russian ports, 22 p. Vessels arriving in ballast pay half of the above dues. **Custom House Clearing Fee:**—For vessels from 80 to 120 tons, 10 mk.; 120 to 160 tons, 12 mk.; 160 to 200 tons, 15 mk.; and for every additional 50 tons up to 400 tons, 5 mk. extra; from 400 and up to 1,000 tons, for every additional 100 tons, 10 mk. extra; for 1,000 to 1,100 tons, 110 mk.; for 1,100 to 1,200 tons, 125 mk.; from 1,200 and up to 1,800 tons, for every additional 200 tons, 25 mk. extra; for vessels above 1,800 tons, 225 mks. The fee is payable for clearing as well in as out. **Manifest:**—7 to 20 mk., according to the size of the vessel. **Bill of Health:**—4 mk. 30 p., besides the Consul's certificate. **Brokerage:**—Chartering commission, $2\frac{1}{2}$ to 5 per cent. Clearing vessels, inwards and outwards: small vessels, 40 to 50 mk.; and large vessels, 75 to 100 mk. **Stevedore:**—2 to 4 mk. per St. Petersburg std. Labour, moderate prices. All kinds of provisions, stores, and equipments for ships to be had.

Pro Forma Charges on a steamer of 1,200 net reg. tons, drawing 12 ft. without, and 19 ft. with cargo, coming in ballast from a foreign port, and going out with 900 stds. sawn wood goods, loaded at Räfsö:—

	Mk.	p.
Harbour dues at 30 penni per reg. ton	360	00
Lighthouse dues at 66 penni per reg. ton	792	00
Tonnage dues at 10 penni per reg. ton (payable once a year)	120	00
Custom House dues	250	00
Manifests, passports, etc.	45	00
Pilot in and out	57	50
Tugboat for shifting in the road	50	00
Steam launch for captain, Custom House officer, etc.	50	00
Stowing 900 std. deals, battens ($\frac{1}{4}$ large boards), at 3 mk. 25 p.	2,925	00
right through		

Carried forward 4,649 50

Russia—Björneborg (*continued*).

	Mk.	p.
Brought forward	4,649	50
Labourers' insurance against accidents, $2\frac{1}{2}$ per cent.	73	13
Telegrams, postages, petty expenses, etc.	27	37
Agency fee	75	00
	4,825	00 = £191 8s. 10d.

When loaded at any out port (except Räfsö), a steamboat is necessary to bring the Custom House officers and papers on board, the hire of which is about 75 mk.

BORGÅ.

Borgå is in lat. $60^{\circ}25'$ N., long. $25^{\circ}40'$ E.

Population.—About 5,000.

Accommodation.—Vessels drawing 12 ft. can proceed as far as Haikå, a landing place 3 miles S. of Borgå. Those drawing 22 ft. can come to within 7 miles of Borgå.

Pilotage.—According to the tonnage and draught of the vessel. For instance, a steamer of 2,000 tons, drawing $18\frac{1}{2}$ ft., 94 mk. 10 p.; 1,000 tons, drawing $18\frac{1}{2}$ ft., 81 mk. 80 p.; 500 tons, drawing $18\frac{1}{2}$ ft., 67 mk. 10 p.

Port Charges.—**Harbour Dues:**—30 p. per reg. ton. **Tonnage Dues:**—10 p. per reg. ton. **Light Dues:**—In ballast, 22 p. per reg. ton; with cargo, 44 p. per reg. ton.

BRAHESTAD.

Brahestad is in lat. $64^{\circ}42'$ N., long. $24^{\circ}28'$ E.

Exports.—Wood and tar.

Accommodation.—There is 9 ft. of water near the inner quay 16 to 18 ft. 3 miles from the town at the quay, and 5 fathoms in the roadstead about 2 miles off the town, where vessels are well sheltered.

Pilotage.—1 mk. per foot draught.

Pro Forma Charges on a vessel of 110 tons reg., ballast in, and cargo of 920 barrels of tar out:—

	Mk.
Customs dues	81
Harbour „	40
Ballast „	16
Customs officer	14
Stowing cargo	25

176 = £6 19s. 8d.

Expenses of a steamer of 760 tons reg., about £95.

EKENÄS.

Ekenäs is in lat. $60^{\circ}0'$ N., long. $23^{\circ}31'$ E.

Population.—2,500.

Imports.—Tea, coffee, and flour.

Accommodation.—The harbour has a depth of 16 ft. at the entrance, and 10 ft. at the quayside. There is no wharfage, but good anchorage. There are no cranes, and large vessels load and discharge by means of lighters. Ekenäs is connected by railway with Hangö, Åbo,

Russia—Ekenäs (*continued*).

and Helsingfors ; there is also steamboat service to Åbo, Hangö, Stockholm, and St. Petersburg.

Pilotage.—Compulsory. **Towage** :—According to agreement.

Port Charges.—**Light Dues** :—44 penni per reg. ton. **Wharfage** :—20 penni per reg. ton. **Clearance Fees** :—£4. **Labour** :—50 penni per man per hour.

FREDRIKSHAMN.

Fredrikshamn, in lat. $60^{\circ}34' N.$, long. $27^{\circ}14' E.$, is situated about 53 miles W.S.W. of Wiborg.

Population.—4,000.

Imports.—Salt, coal, and colonial goods.

Exports.—Deals, battens, boards, and oats.

Accommodation.—A pilot is indispensable, and one can be had at the pilot station on Leskar, south of Aspo Island. Vessels of large draught anchor in 5 to 6 fathoms about $1\frac{1}{2}$ miles from the town ; those drawing 15 ft. can go close to the town. Steam-tugs can be had.

Port Charges. **Harbour and Tonnage Dues** :—40 p. per reg. ton. **Shipbroker** :—Clearance, etc., £3. **Stevedore** :—Deals and battens, 3 mk. 25 p. ; boards up to $1 \times 4\frac{1}{2}$, 3 mk. 75 p. ; boards from $1 \times 4\frac{1}{2}$, 4 mk. 30 p. ; props, 4 mk. ; staves, 6 mk. ; bundles, 4 mk. **Discharging** general cargo, 80 p. per ton.

GAMLA CARLEBY.

Gamla Carleby is in lat. $63^{\circ}49' N.$, long. $23^{\circ}8' E.$ It stands on the W. bank of Trullo Fiord, near its head.

Population.—3,000.

Imports.—Sugar, coffee, coal, tobacco, iron, salt, spirits, etc.

Exports.—Pulpwood, deals, and tar

Accommodation.—The harbour, called Yxpila, is 2 English miles from the town, and has 10 to 34 ft. of water ; it is safe from all winds, with good holding ground. There are two moles, one with 16 to 18 ft., and the other with 18 to 22 ft. of water alongside, with the railway brought on to them, so that vessels can load and unload direct into the wagons. There is at Yxpila harbour an iron factory where smaller repairs can be effected. The harbour is open generally between the middle of May and the end of November.

On arrival the Customs officers, and generally the shipbroker, come on board. The manifest of the cargo and stores and crew list must be made out carefully before arrival. When dutiable goods are to be discharged an officer from the Custom House remains on board. Vessels must move when ordered by the harbour master. No work allowed on Sunday.

Pilotage.—Compulsory. Rates according to tariff based on draught of water and reg. tonnage of vessel. Vessels arriving from the south receive the pilot from Tankar Island, and from the north at Trullo Island.

Port Charges.—**Light Dues and Last Dues** :—See Finland. **Harbour Dues** :—25 p. per reg. ton. Vessels entering Yxpila harbour for clearance at Customs only pay no harbour dues. **Wharfage** :—2 p. per net reg. ton first day ; 1 p. per net reg. ton for every following day. **Bailast Dues** :—

Russia—Gamla Carleby (*continued*).

Inwards, 1*l.* per ton; outwards, 1*l.* per ton. **Labour**:—2*s.* 6*d.* per day. **Ballast**:—About 2 mk. 50 p. per ton, to be obtained from railway wagons alongside. **Stevedore**:—Loading and discharging, 65 to 90 p. per ton; loading wood, from 3 mk. to 3 mk. 75 p. per standard. **Brokerage**:—For a vessel of 650 reg. tons, clearing and interpreting, 100 mk. in and out. Vessel windbound pay only pilot and light dues. Provisions can be obtained at moderate prices.

Pro Forma Charges on a steamer of 1,078 reg. tons, coming from Cronstadt in ballast, and leaving for England with a cargo of 653 cubic fathoms of pulp-wood:—

	Mk.	p.
Pilotage in from Tankar	14	20
„ out	22	60
Harbour and quay dues	334	50
Harbour pilot and mooring boat	25	00
Consulate's fees	3	15
Stevedores for loading	2,637	75
Custom-House officers	15	50
Custom-House account for light dues, in and out; clearance in overtime; expedition charges, in and out; stamps	776	90
Clearing and reporting	100	00
	3,929	60 = £155 1 <i>s.</i> 4 <i>d.</i>

The bay of Rauma, Himango harbour, is about 20 miles N. of Gamla Carleby, with 20 ft. of water, and perfectly safe. All shipmasters must enter their vessels at the Customs at Gamla Carleby, or be liable to a penalty, but there is no occasion to take their vessels back to clear out; the captain can post overland. The charge for this journey is 10*s.* A bill of health and manifest from the Russian Consul at the port of departure is also necessary.

HANGÖ.

Hangö is in lat. 59°50' N., long. 22°58' E., on the northern entrance to the Gulf of Finland.

Imports.—General cargo, coffee, sugar, hides, etc.

Exports.—Deals, boards, butter, granite, wood paper-pulp, paper and provisions.

Accommodation.—Hangö harbour is rather small and narrow. At the outer half of the mole, which is 1,000 ft. (Finnish), there is 32 ft. of water, decreasing to 22 ft.; two large steamers can load or discharge. At the inner half of the mole, which is supplied with a shed 310 ft. long, there is 22 ft. of water, decreasing to 6 ft.; two coasting steamers can load. In the middle of the mole is a crane to lift 18 tons. In the roads there is good anchorage in 12 to 15 fathoms. There are 3 quays, 650, 80, and 65 ft. long respectively, with a depth alongside of from 16 to 24 ft.

Hangö is an excellent winter harbour, being generally open to navigation the whole winter, though it is sometimes closed for two or three months, when the cold is exceptionally severe. Communication is kept open by three ice-breaking steamers. The pilot station is at Russar, an island, and on the pilot signal being made, the pilot will meet the vessel at Vladislavgrund, or shoal, weather permitting. There is railway communication with St. Petersburg.

Pilotage.—According to the tonnage and draught of vessels. For

Russia—Hangö (*continued*).

instance, for a steamer of 1,700 reg. tons, drawing from 13 ft. 9 in. to 14 ft. 9 in., 39 mk. 40 p.; from 15 ft. 9 in. to 16 ft. 9 in., 42 mk. 30 p.; from 17 ft. 9 in. to 18 ft. 8 in., 45 mk. 60 p.; from 19 ft. 8 in. to 20 ft. 8 in., 49 mk. 30 p.

Port Charges.—**Lighthouse Dues** :—Vessels with cargo, from or to foreign ports, 44 p. per reg. ton; in ballast, 22 p. per reg. ton; from or to Russian ports, half this amount. **Custom House Dues** :—On a vessel of 1,700 reg. tons, 200 mk. in, and the same out. **Tonnage Dues** :—10 p. per reg. ton (payable once a year). **Brokerage** :—About 125 mk. in and out, for a large vessel. **Town Dues** :—On duty paid goods, 2 per cent. **Ballast** :—Sand, 10 mk. per wagon (about 7 tons); stone, 1 mk. 90 p. per ton. **Water** :—Delivered on board by hose at 20 mk. per 5 tons. **Discharging** :—According to cargo, as per agreement; on an average 1 mk. per ton. The railway harbour is free from harbour dues.

HELSINGFORS.

Helsingfors, in lat. 60°10' N., long. 24°58' E., is the point of departure for most of the Finnish sea-going steamers.

Population.—117,317.

Imports.—Coal, flour, sugar, coffee, wine, spirits, machinery, etc.

Exports.—Timber, paper, etc.

Accommodation.—The harbour is well sheltered, and the largest ships can enter safely and lie alongside the quay. Helsingfors is about six weeks longer free of ice than Cronstadt, and is open about a month earlier in the spring. There are three powerful ice-breakers, which generally keep the port open well into January and open it again early in April. There is a good shipbuilding yard and a large slip, where vessels up to 280 ft. in length can be taken up and repaired, the charges being comparatively moderate; also a dry dock, the length of which is 300 ft., width of entrance 56 ft., and depth of water on the sill 18½ ft., combined with necessary foundry and mechanical shops for the repair of iron steamers. Communication by telegraph and telephone with every port of any consequence along the Finnish coast. Sörnås is the loading place for wood cargoes. Vessels drawing 18 ft. can load alongside the quay, which is 2,780 ft. long, and vessels of greater draught complete loading in the roads, which are quite sheltered and safe. The length of quays in the west and south harbours is 6,900 ft. Vessels which load at Bastvik, about 4 Swedish miles from Helsingfors, must report at the Custom House at Helsingfors. There is a light at Grahara and a lightship at Åransgrund.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the central tower of the Observatory, 161 ft. above sea level, at 11 h. 56 m. 0 s. a.m., and dropped at noon Helsingfors Observatory mean time, which is equal to 22 h. 20 m. 11.5 s. Greenwich mean time. An explosive signal is made simultaneously.

Pilotage.—According to draught and tonnage.

Port Charges.—**Harbour Dues** :—Vessels arriving with cargo from a foreign port, 60 p. per reg. ton; vessels coming from a port in Finland or Russia, 40 p. per reg. ton; vessels coming from another Finnish port, in ballast, 20 p. per reg. ton. **Towage** :—Moderate; boats are always obtain-

Russia—Helsingfors (*continued*).

able; ships find cables when being towed. **Stowage** :—3 mk. 50 p. per standard for deals; more for battens and boards. **Ballast** :—3 mk. per ton. **Water** :—From water boats, 5 mk.; from alongside the quay, 30 p. per ton. **Labourers** :—3½ to 4 mk. per day.

Pro Forma Charges on a steamer of 697 reg. tons, coming from Blyth, with 1,460 tons cargo, and leaving for a Finnish port in ballast :—

	Mk.	p.
Pilotage, in and out	88	80
Harbour pilot	10	00
Harbour dues	419	05
Ordering pilot	1	00
Customs dues, inwards	441	38
„ dues, outwards	76	67
„ declaration	20	00
„ watch-keeping	18	00
„ clearing in on overtime	8	00
Steam-launch for taking ships' papers ashore	5	00
Discharging, 11d. per ton	1,761	81
Telegrams	6	14
Petties	12	00
Clearance in and out	125	00

2,992 85 = £118 15s. 0d.

Pro Forma Charges on a steamer of 773 reg. tons, arriving with a full cargo of coal from Blyth, and leaving with a full cargo of deals for Ghent :—

	Mk.	p.
Pilotage, in and out	94	80
Harbour dues	464	65
Harbour pilots, 10 mk. and 8 mk.	18	00
Customs dues, inwards	415	12
„ dues, outwards	429	12
„ declaration	34	00
„ watch-keeping	20	00
„ clearing in on overtime	3	00
Steamlaunch for taking ships' papers ashore	5	00
Discharging, 11d. per ton	1,786	44
Loading 615 stds. deals	2,227	97
Telegrams	8	34
Petties	18	00
Clearance in and out	125	00

5,648 54 = £224 1s. 5d.

JAKOBSTAD.

Jakobstad, in lat. 63°41' N., long. 22°41' E., is situated on the Gulf of Bothnia.

Population.—3,000.

Exports.—Props and pulpwood.

Accommodation.—The harbour, Alholmen, is situated about 3½ kilometres from the town. At the quays there is from 18 to 21 ft. of water; Jernvägsbron, 19 ft., Laukkobron, 22 ft. Large vessels load at Adö roads in a depth of 24 ft. The railway runs along the quay, and goods can be loaded direct to and from the trucks. Navigation is open from May to November. There is a telephone, post office, and pilot station at the harbour.

Port Charges.—**Harbour Dues** :—20 p. per net reg. ton, for stea-

Russia—Jakobstad (continued).

mers. **Bridge Dues** :—3 p. per net reg. ton, first day, $1\frac{1}{2}$ p. for each succeeding day. Sailing vessels pay according to draught and tonnage; 100 tons, 8 mk., first day, 4 mk. each succeeding day. **Stevedore** :—3 mk. per cubic fathom for props; 4 mk. per standard for sawn goods.

Pro Forma Charges on a steamer of 925·28 reg. tons, ballast in, cargo of pit-props out :—

	Mk.	p.
Pilotage, in, via Nye Carleby, 33·60, 30·60; and 10 mk.	74	20
Customs dues, in	298	50
Pilotage and Customs dues, out	561	55
Customs declaration	35	00
Customs officers' bill	11	00
Harbour dues	299	60
Stevedore's bill, pulpwood, 3·75 mk. per fathom Engl.; sawn goods, 4 mk. per std.	1,886	25
Uprights	75	00
Tugboat	100	00
Telegrams	4	38
Postage and petties	5	35
Cash to captain	100	00
Agency, in and outward clearing	100	00

3,550 83—£140 17s. 9d.

KASKÖ ISLAND.

Kaskö Island is in lat. $62^{\circ}23'$ N., long. $21^{\circ}14'$ E.

Accommodation.—The inner harbour is a narrow channel with a depth of 24 to 26 ft. The outer harbour is a good and safe anchorage, with a depth of 36 to 42 ft.

Pilotage.—According to draught and tonnage of the vessel. For instance, a vessel of 1,800 to 2,000 tons, drawing—

	Mk.	p.		Mk.	p.
10 ft. 10 in.	37	10	16 ft. 9 in.	44	60
11 „ 10 „	38	10	17 „ 9 „	46	20
12 „ 10 „	39	20	18 „ 8 „	47	90
13 „ 9 „	40	40	19 „ 8 „	49	70
14 „ 9 „	41	70	20 „ 8 „	51	60
15 „ 9 „	43	10			

To the harbour from the sea, and the same outward.

Port Charges.—**Harbour Dues** :—Vessels with a cargo in and out, 28 $\frac{1}{2}$ p. per reg. ton; with ballast in and cargo out, 21 p. per reg. ton. **Quayage** :—5 mk. per day. **Customs Dues** :—Same as in Kristinestad.

KIMITO.

Kimito, in lat. $60^{\circ}9'$ N., long. $22^{\circ}48'$ E., is about 5 miles inland.

Exports.—Timber, pit-props, etc.

Accommodation.—The harbour of Kimito is on the eastern side of the island of the same name, about 25 miles S.S.E. of Åbo. The harbour is perfectly safe, and has 16 ft. of water. Ballast is discharged over the side.

All Custom House business is transacted at Åbo, where shipmasters obtain their clearance.

Pilotage.—A pilot is indispensable to a stranger. Rates, in or out, $3\frac{1}{2}$ marks (about 3s.) per foot.

Port Charges.—**Customs Dues** :—£7.

Russia.**KOTKA.**

Kotka, in lat. 60°28' N., long. 26°57' E., is situated about half-way between Helsingfors and Wiborg, and has one of the best harbours in Finland.

Population.—7,500.

Imports.—Corn, flour, sugar, chemicals, steel, iron manufactures, and coal.

Exports.—Wood goods, wood pulp, paper, glass, and butter.

Accommodation.—For entering the passage to Kotka a pilot is indispensable, and one can be had at the pilot station of Hogland or Aspöe. The harbour has a depth of 35 ft., with a very good anchorage and shelter for vessels of almost any size.

Port Charges.—All harbour expenses, Custom House expenses, and pilotage from Kotka are, for ships coming from a Russian port, about 1 mk. 22 p. per ton; for ships coming from any other port, about 1 mk. 50 p. per ton. Loading expenses are. Deals and battens, about 3 mk. per standard; boards, 3 mk. 25 p. to 3 mk. 50 p. per standard.

Pro Forma Charges on a steamer of 739 reg. tons, arriving from a Russian port, and loading 500 standards of wood goods:—

	Mk.	p.
Pilot in from sea	48	40
Harbour pilot	5	00
Harbour expenses, Custom House, etc., pilot from Kotka, about	898	30
Clearance and petty expenses, about	75	00
Stevedore, 500 standards at 3 mk. (for deals and battens)	1,500	00

2,526 70 = £100 5s. 0d.

KRISTINESTAD.

Kristinestad is in lat. 62°17' N., long. 21°22' E.

Population.—3,500.

Imports.—Colonial and manufactured goods.

Exports.—Timber, pitch, and butter.

Accommodation.—About 1½ miles south of the town there is a bar, having a dredged channel with a depth of 24 ft. Within this bar there is a depth of from 15 to 22 ft. The channel has been dredged and the depth increased to 24 ft., so that vessels drawing 22 ft. can load and discharge their cargoes at the town. There is a good and safe anchorage in 29 to 30 ft. of water, 2½ miles south of the city at Welgrund, where vessels drawing more than 15 ft. are obliged to discharge or load part of their cargoes.

Pilotage.—According to draught and tonnage of the vessel. For instance, a vessel of 2,000 to 3,000 tons, drawing—

	Mk.	p.		Mk.	p.
10 ft. 10 in.	60	50	19 ft. 8 in.	78	50
11 „ 10 „	62	10	20 „ 8 „	81	00
12 „ 10 „	63	80	21 „ 8 „	83	60
13 „ 9 „	65	60	22 „ 8 „	86	30
14 „ 9 „	67	50	23 „ 7 „	89	10
15 „ 9 „	69	50	24 „ 7 „	92	00
16 „ 9 „	71	60	25 „ 7 „	95	00
17 „ 9 „	73	80	26 „ 7 „	98	10
18 „ 9 „	76	10			

Port Charges.—**Harbour Dues**:—Vessels over 25 reg. tons, 15 p.

Russia—Kristinestad (continued).

per reg. ton. **Dredging Dues** :—8 p. per reg. ton (payable once a year). **Ballast** :—8 p. per reg. ton. **Custom House Dues** :—Vessels with cargo in and out, 44 p. per reg. ton ; in ballast, 22 p. per reg. ton. Vessels to and from Russian ports, half the above rates. **Last Dues** :—10 p. per ton (payable once a year). **Custom House Clearance and Pass** :—Vessels of 30 to 50 tons, 5 mk. ; 50 to 80 tons, 8 mk. ; 80 to 120 tons, 10 mk. ; 120 to 160 tons, 12 mk. ; 160 to 200 tons, 15 mk. ; 200 to 250 tons, 20 mk. ; 300 tons, 25 mk. ; and 5 mk. for every additional 50 tons.

LOVISA.

Lovisa is in lat. 60°27' N., long. 26°16' E.

Population.—3,500.

Imports.—Salt, flour, wine, cork wood, sulphur, coal, lime, manufactured goods, etc.

Exports.—Deals, battens, boards, pit-props, pulp wood, birch squares, tar, barley, etc.

Accommodation.—Vessels discharge and load at Walkom, 5 miles below the city ; it is the terminus of the railway. There are two piers here with 24 ft. of water alongside ; the depth in the port is from 27 to 30 ft. Vessels drawing 22 ft. can come here. The fairway from the sea up to the city is well lighted, so that vessels can enter and leave by night.

Pilotage.—Compulsory ; same as other Finland ports. Pilots can be had at Orregrund and Wåtskär.

Port Charges.—**Port Dues** :—30 p. per reg. ton. **Light Dues** :—Loaded vessels, 44 p. per reg. ton ; in ballast, 22 p. **Shipbroker** :—Clearance, etc., 100 mk. **Loading** :—3 mk. 50 p. to 4 mk. per standard on an average. **Discharging Ballast** :—10 p. per reg. ton. **Towage** :—About 100 mk. from port to sea, or vice versa. **Tonnage Dues** :—10 p. per reg. ton (payable once a year).

Pro Forma Charges on a steamer of 880 reg. tons :—

	Mk.	p.
Stevedore, 400 stds. boards, at 3 mk. 50 p.	1,400	00
Pilotage from sea	72	80
Custom House and harbour dues	1,005	80
Telegrams and postages	7	04
Steam launch	25	00
Carriage, 15 mk. ; water, 50 mk.	65	00
Butcher's bill	130	00
Insurance of labourers	28	00
Bill of health	12	00
Brokerage, commission, etc.	100	00
	2,845	64 = £112 18s. 1d.

There are two more loading places within this Custom House district, Abborfors and Pernoviken, where vessels pay respectively 10 p. and 15 p. per reg. ton for harbour dues. Vessels arriving from abroad or from Russia and bound for these ports must first call at Lovisa to enter at the Custom House, otherwise they will be liable to a fine.

MARIEHAMN.

Mariehamn, in lat. 60°10' N., long. 20°0' E., is situated on Åland Island.

Population.—1,000.

Russia—Mariehamn (*continued*).

Exports.—Wood, pit-props, fish, and butter.

Accommodation.—The harbour is safe and commodious, and is free of ice nearly all the year round. There are no tides. Steamship connection with Åbo and Stockholm. There are no dry docks in Mariehamn but vessels up to 1,000 tons reg. can be hauled down for repairs.

Pilotage.—For a vessel of 1,000 reg. tons, drawing 19 ft., 33 mk.; 2,000 reg. tons, drawing 19 ft., 43 mk. Pilotage is free for vessels coming in for provisions or shipping a crew.

Port Charges.—Wharfage Dues:—10 p. per reg. ton. **Entrance Fees:**—30 mk. **Clearance Fees:**—30 to 40 mk. **Mooring:**—5 mk. per vessel. **Towage:**—About 100 mk. in and out. **Boat Hire:**—As per agreement. **Light Dues:**—44 p. per reg. ton (loaded); 22 p. per reg. ton (in ballast). **Ballast:**—Stone, 2 mk. per ton; sand, 1 mk. per ton. **Labour:**—35 p. per hour. **Brokerage:**—25 mk.

Pro Forma Charges on a steamer of 1,000 tons reg., ballast in, and with a cargo of wood out, drawing 19 ft. loaded:—

	Mk.	p.
Harbour dues, 10 p. per reg. ton	100	00
Brokerage, entrance	60	00
Pilotage in and out	50	70
Towage	100	00
Boat hire	5	00
Light dues	660	00
Stevedore, 500 standards at 2 mk. per std.	1,000	00
	1,975	70 = £78 7s. 10d.

NARVA.

Narva, in lat. 59°22' N., long. 28°11' E., is on the river Narova, on the south of the Gulf of Finland, about 9 miles from the entrance.

Population.—About 20,000.

Imports.—Herrings, cotton, coal, iron, piece goods, jute, and fire bricks.

Exports.—Timber and deals.

Accommodation.—There is a good anchorage for large vessels in the bay off the mouth of the river; the bottom is sand and mud. During the autumn it is not safe. Five buoys with heavy anchors and chains are moored in the roads. There are two lifeboats and rocket apparatus. The average depth on the bar in the spring is 10 ft.; in the summer, 12 to 14 ft. Draught available for entering the harbour is 12 to 14 ft.; for coming to the town, 9 to 9½ ft. Length of town quayage—public, 1,600 ft.; private, 2,850 ft. Length of quays at the mouth of the river, 1,100 ft. There are no cranes. There are no shipbrokers here; the merchants do their own business direct with shipmasters. If vessels are taken up on the spot, a commission of 2 to 3 per cent. is charged as brokerage on the outward freight. Timber ships are chiefly chartered, and arrive in ballast. There are no docks at Narva (except a small floating dock belonging to a private firm); wooden piles, driven in alongside the river, form a platform for loading or discharging vessels.

The signal required of a sailing vessel, showing that she is ready for towing, is a flag hoisted half-way on the main or mizzen mast, or the gaff. If a captain has given this signal, and the steamer lays by, he is obliged to allow

Russia—Narva (continued).

his ship to be towed, or else pay 10 rbls. fine. The towing rope must be given from the ship; if the captain, however, wants it from the steamer, 3 rbls. extra have to be paid.

Pilotage.—Compulsory, 10 cps. per last of two tons reg.

Port Charges.—Tonnage Dues:—40 cps. per last. **Clearing Vessel:**—25 cps. per last. **Expedition Dues:**—12 rbls. 50 cps. **Address Commission,** from the amount of freight, 2 to 3 per cent. **Towage:**—From roads to harbour, 25 rbls.; harbour to roads, 25 rbls.; harbour to town, 10 rbls. **Stowage:**—Deals, 1 rbl. 25 cps.; boards, 1 rbl. 50 cps. per standard. **Stone Ballast:**—1 rbl. per ton. **Boat Hire:**—3 rbls. for taking vessels to or from the bay. **Consular Fees:**—British, 2s. 6d. **Labour:**—Loading, from 1 rbl. 25 cps. to 1 rbl. 50 cps. per standard.

Pro Forma Charges on a steamer of 1,888 reg. tons, with a cargo of 1,430 tons in, and ballast out, drawing 18 ft. loaded:—

	Rbls.	cps.
Harbour dues at 20 cps. per reg. ton	377	60
Pilotage in and out, at 5 cps. per reg. ton	94	40
Towage	90	00
Boat hire	24	00
Expedition dues	12	50
Loading charges	505	60
Clearance fees	236	00
Other expenses	25	00

1,365 10 = £144 6s. 2d.

NIKOLAISTAD.

(See **Wasa**, p. 519).

NYE CARLEBY.

Nye Carleby is in lat. 63°32' N., long. 22°32' E.

Population.—About 1,100.

Imports.—Salt and colonial produce.

Exports.—Tar, deals, etc.

Accommodation.—Vessels of about 12 ft. draught load at Diupsten, about 2 miles from the town; those of greater draught load at Great Alor, 5 miles distant.

Pro Forma Charges on a vessel of 220 reg. tons, entering in ballast, and leaving with a cargo of wood and tar, drawing 11½ ft. :—

	Mk.	p.
Pilotage in	15	60
Harbour dues	49	50
Customs dues	102	00
Customs officer	38	45
Pilotage out	16	90

222 45 = £8 16s. 6d.

NYSTAD.

Nystad is in lat. 60°49' N., long. 21°26' E.

Population.—About 4,200.

Imports.—Salt, flour, and general merchandise.

Exports.—Sawn wood, granite, etc.

Accommodation.—Vessels coming in from the sea, south of the

Russia—Nystad (*continued*).

island of Enskar, have to pass a narrow inlet called the Kirsta Sound, through which pilots will not take vessels drawing more than 22 ft. In the inner harbour, close up to the town, there is 7 ft. of water at the wharves; in the outer harbour, 13 to 19 ft., and further out 25 ft. and more. Small coasting steamers generally come up to the wharves in the town; larger trading steamers load and discharge at a wharf in the outer harbour. Steamers up to 16 ft. take in wood cargoes from lighters in the harbour, or at the wharf at Janhua saw mills; if over 16 ft. they are obliged to complete their loading in the harbour. There is a patent slip for raising vessels 338 ft. in length and 42 ft. beam. Repairs of all kinds can be executed.

Pilotage.—Compulsory. Rates fixed according to draught and tonnage of the vessel.

Port Charges.—**Light Dues** :—Loaded vessels, 44 p. per reg. ton; in ballast, 22 p. per reg. ton. **Harbour Dues** :—30 p. per reg. ton. **Tonnage Dues** :—10 p. per reg. ton (payable once a year). **Clearance In and Out** :—From 50 to 75 mk. **Stevedore** :—Loading, per standard, deals, 2 mk. 75 p.; battens, 3 mk.; boards over 5"×1", 3 mk. 50 p.; boards, under 5"×1", 4 mk.; staves, 5 to 7 mk., according to size. **Labour** :—40 to 50 p. per hour.

Pro Forma Charges on a steamer of 1,095·5 tons reg., coming in from Kiel empty, and bound for Antwerp, via Helsingfors :—

	Mk.	p.
Pilotage, inwards 21–22 miles, 1,000–1,200 reg. tonnage, drawing 10 ft. 10 in.	60	50
Pilotage, outwards, drawing 13 ft. 9 in.	71	40
Light dues, inwards, at 22 p. per reg. ton	241	01
" " outwards, at 44 p. per reg. ton	482	02
Harbour dues, inwards and outwards, at 30 p. per reg. ton	328	65
Telegrams, stamps, etc.	15	00
Harbour pilot	10	00
Custom House visitation and expedition fees, in and out—110 mk.	220	00
Stevedore's bill	951	67
Clearance in and out	60	00
Tonnage dues (payable once a year)	105	90
Customs House passport	3	00

2,549 15 = £101 2s. 10d.

RAUMO.

Raumo is situated on the coast of the Gulf of Bothnia, in lat. 61°7' N., long. 21°30' E.

Population.—About 5,500.

Imports.—Salt, flour, colonial stores, building materials, etc.

Exports.—Timber and wood pulp.

Accommodation.—The harbour, being 8 miles from the open sea, is well sheltered and can be entered by two channels; the northern, between the lighthouses of Valkiakari and Nurwis (now, 1909, being built), and the southern, between the Sautakari beacon and Verknas Point. The northern channel is deep, well lighted and navigable for large craft; the other channel is rather crooked and more shallow, and only navigable for vessels drawing up to 18 ft. Most of the discharging is done alongside the wharves in from 18 to 20 ft. of water. Depth in the roads, near the wharves, 24 to 26 ft. Depth alongside the wharves, 18 to 20 ft., where vessels load and discharge from the railway wagons. Raumo is not a tidal harbour.

Russia—Raumo (*continued*).

Pilotage.—Compulsory. Charges calculated at per foot of draught according to Government scale. **Towage** :—According to agreement.

Port Charges.—Tonnage Dues :—10 penni per reg. ton. **Clearance Fees** :—From 15 to 40 marks, according to size of vessel. **Boat Hire** :—From 10 to 15 marks. **Light Dues** :—44 penni per reg. ton inwards, and the same outwards. Vessels in ballast, half these rates. **Labour** :—50 penni per hour, and 25 penni extra for overtime. **Harbour Dues** :—24 penni per reg. ton for the first visit, and half this rate if coming a second time during the season. **Brokerage** :—From 75 to 100 marks.

Pro Forma Charges on a steamer of 871 tons reg., ballast in, and loading 793 standards of sawn wood outwards, drawing 16 ft. loaded :—

	Mks.	p.
Harbour dues at 24 penni per reg. ton	209	04
Pilotage, in and out	85	70
Stowing 793 stds. of sawn wood	2,360	48
Brokerage	75	00
Labourers' insurance, 3 per cent. on labour	71	81
Boat hire, in swinging, mooring, and unmooring	15	00
Tonnage, light, and other Customs dues	788	89
Telegrams and postage	14	45
Stamps for bills of lading and authority to load	2	50
Provisions	60	25

3,683 12 = £146 2s. 10d.

TORNEA.

Tornea, in lat. 65°51' N., long. 24°9' E., is situated on the peninsula of Svensaro, about a mile from the mouth of the river Tornea, which here forms the boundary line between Sweden and Russian Finland.

Population.—About 1,100.

Imports.—Colonial goods, etc.

Exports.—Pickled salmon, tar, deals, battens, and boards.

Accommodation.—The harbour is generally frozen over about the end of October, and is open again about the end of May. Only small vessels of 4 ft. draught can reach the town of Tornea. The usual anchorage for large vessels is off the island of Roytta, about 5 miles below the town, where the Custom House stands. There is 16 ft. of water within a cable of the shore, and vessels of 25 ft. draught can lie a quarter of a mile further off. Pilots should be taken at the Plewna lightship.

Pilotage.—For 24 English miles, 40 mk. for 15 ft. draught.

Port Charges.—Discharging Ballast :—2 mk. per ton. **Harbour Dues** :—20 p. per ton. **Light and Beacon Dues** :—For inward-bound vessels in ballast, 22 p.; loaded, in or outwards, 44 p. per ton. **Expedition Expenses** :—30 mk. for vessels up to 350 tons; 10 mk. extra for every additional 100 tons; Custom House officers, 3 mk. per day. Sheep, vegetables, firewood, dry meats, and fresh water can be obtained here.

ULEABORG.

Uleaborg, in lat. 65°1' N., long. 25°30' E., stands on the bank of the river Ulea, near the head of the Gulf of Bothnia.

Population.—17,869.

Russia—Uleaborg (*continued*).

Imports.—Colonial produce, raw hides, tanning materials, coal, salt, and flour.

Exports.—Deals, battens, boards, tar, pitch, pit-props, pulp-wood, leather, and skins.

Accommodation.—Vessels bound for Uleaborg should make Marianemi lighthouse on Carlo Island, where pilots are obtained ; the usual pilot flag should be hoisted. If answered by a flag on the flagstaff at the pilot station, vessels will know that a pilot has already left for the ship ; if answered by a ball, vessels will know that there are no pilots available, and must anchor and wait. Uleaborg is approached from Marianemi by a channel 30 miles long, with a depth of from 5 to 10 fathoms. Vessels drawing 22½ ft. can come up to the roads of Uleaborg, which are about half a mile from the inner harbour, with from 4 to 6 fathoms of water, and are well sheltered. Vessels with a draught of not more than 16 ft. can discharge alongside the quay in the inner harbour. Uleaborg can be visited by steamers from June 1 to November 1, with few exceptions. The custom of the port for loading is said to be 80 standards per day of 12 hours, but a good steamer will take from 100 to 140 standards per day. All sawn timber is loaded from lighters.

Ballast can be discharged, when the vessel does not draw more than 16 ft., alongside the quay in the inner harbour ; a charge of 20 p. per ton is made, but vessels must hire workmen to wheel the ballast in barrows to a place some 20 yards from the quay. Vessels drawing more than 16 ft. must discharge into lighters on the roads ; cost about 3 mk. per ton. There is railway connection with St. Petersburg and Tornea on the Swedish frontier. Provisions are easily obtained, and are fairly cheap.

Time Signals.—Chronometers can be checked. A black ball is hoisted half mast on the Navigation School (77 ft. above sea level) at 11.55 a.m., close up at 11.58 a.m., and dropped at noon Uleaborg mean time, equal to 22 h. 17 m. 58 s. Greenwich mean time. The signal is only given on Mondays, but errors can be corrected at any time by application to the Navigation School.

Pilotage.—According to tonnage and draught of vessels. For instance, from Marianemi to Uleaborg Roads, for a vessel of 500 tons, drawing 13 ft., 82 mk. ; same vessel drawing 17 ft., 114 mk. ; vessel of 1,000 tons, drawing 14 ft., 100 mk. ; same vessel drawing 19 ft., 153 mk. ; vessel of 1,500 tons, drawing 15 ft., 110 mk. ; same vessel drawing 21 ft., 170 mk. Vessels entering pay an additional sum of 19 mk. 86 p. for the pilot's journey home ; when clearing they pay 25 mk. for a boat to meet the pilot.

Port Charges.—Light and Beacon Dues:—Vessels entering or leaving in ballast, 22 p. per ton ; entering or leaving with cargo, 44 p. per ton. **Tonnage Dues:**—10 p. per ton (payable once a year). **Custom House Expenses:**—According to the size of the vessel ; payable both ways. For instance, a vessel of 500 tons, 55 mk. ; 1,000 tons, 110 mk. ; 1,500 tons, 175 mk. ; 1,800 tons, 200 mk. ; over 1,800 tons, 225 mk. **Harbour Dues:**—50 p. per ton ; large steamers taking part cargo, not over 100 standards, 30 p. per ton. **Clearing:**—Broker's charge, 100 mk. **Towage** can be obtained. There is no fixed charge, an agreement must be made ; 300 mk. is generally asked, but it can be obtained for 250 mk., and sometimes even 200 mk., according to the vessel's draught. This refers to towage from Uleaborg roads to Marianemi.

Russia—Uleaborg (*continued*).

Pro Forma Charges on a steamer of 699 net reg. tons, loaded at Uleaborg :—

	Mk.	p.
Pilotage, in and out	143	60
Harbour dues, 50 p. per ton	349	50
Light and beacon dues in, in ballast, at 22 p. per ton	153	78
" " out, with cargo, at 44 p. per ton	307	56
Last dues (vessel's first visit to Finland that year), at 10 p. per ton	69	90
Customs expenses	160	00
Towage out to Marianiemi	250	00
Stevedoring on 556 standards, at 2 mk. 75 p. per standard	1,529	00
Consul's fee	3	18
Clearing	100	00
	3,066	52 = £121 13s. 5d.

Uleaborg district includes Pateniemi, Haukipudas, Ijo Roytta, and Warjakka, all of which have sufficient water for vessels drawing 20 to 22 ft. Pateniemi is 4 miles from Uleaborg, and Warjakka 3 miles. The expenses are the same, with the exception that the pilot dues are slightly heavier. Haukipudas is 18 miles from Uleaborg, and Ijo Roytta 20 miles. Vessels should make Ulkogrunni beacon, where pilots can be obtained for Haukipudas and Ijo Roytta. There are no harbour dues at these two places; expenses otherwise are the same as at Uleaborg. For Warjakka and Pateniemi a pilot should be taken at Marianiemi lighthouse.

WASA, OR NIKOLAISTAD.

Wasa, or Nikolaistad, is in lat. 63°7' N., long. 21°38' E.

Population.—About 18,700.

Imports.—Salt, coal, and general merchandise.

Exports.—Timber, tar, pitch, corn, cattle, and general provisions.

Accommodation.—There are two fairway channels from the sea. One of these commences at, and takes its name from, Rönnskär, the other at Norrskär, and at both of these islands pilots are to be had. If the signal for a pilot is answered ashore with a square flag, hoisted on a prominent signal staff, the pilot is coming off; but a ball signifies either that all the pilots are out, or that the weather is too bad for boarding the vessel. The fairway of Rönnskär is safe for vessels of a draught of up to 22 ft.; there being beacons, vessels can enter and leave by night; that at Norrskär, in which a change of pilots takes place at Korso, has water enough for ships of up to 22 ft. draught all the way to the outer road of the town. The port is spacious and well sheltered by numerous islands forming a natural harbour. There is about 600 ft. of quayage at the town, and 1,400 ft. at Brandö, which is less than half a mile distant. The depth of water alongside the quays at the town is about 13 to 14 ft.; at Brandö 12 to 14 ft. In the inner road, about a mile from the town, about 15 ft. is found. Vessels drawing more than that must discharge, or finish their loading at Wasklot, which is the outer harbour of Wasa. The railway connecting Wasa with the interior of the country, and terminating along the quays of the town, is carried across the fiord to the island of Wasklot, where vessels drawing up to 24 ft. can lie alongside the quays, which are 1,900 ft. long.

There is a patent slip capable of taking vessels of 200 to 300 net reg.

Russia—Wasa, or Nikolaistad (*continued*).

tons, and good appliances for keel-hauling vessels of, say, up to 1,000 reg. tons are to be had. A steam-tug can always be had for harbour service.

Pilotage.—Payable according to distance, tonnage and draught. For instance, a steamer of 620 net reg. tons, drawing 14 ft. 9 in., entering by Rönnskär, pays 62 mk. 10 p., and when drawing 16 ft. 6 in., 67 mk. 40 p.; when entering by Norrskär the steamer would have to pay 94 mk. 20 p. and 102 mk. 80 p. respectively. Steamers of 1,000 to 1,200 net reg. tons, coming by Rönnskär, drawing about 12 ft., pay 69 mk., and drawing about 19 ft., 87 mk. 90 p.

Port Charges.—Harbour Dues:—40 p. per reg. ton. **Tonnage Dues:**—10 p. per reg. ton, payable only once a year in the whole of Finland. **Light Dues:**—44 p. loaded, and 22 p. in ballast, per reg. ton. **Wharfage:**—3 p. per reg. ton for the first day, and 1½ p. per reg. ton for each following day. **Labourers:**—From 5 to 7 mk. per day. **Ballast:**—Stone, about 1 mk. 50 p.; sand, about 1 mk. per ton. **Provisions** can always be had at moderate prices. Fresh beef about 50 p. per pound.

Custom House Expedition Fee:—For a vessel between 100 and 150 reg. tons, 10 mk.; for every 50 reg. tons above this, 5 mk. extra, making it 35 mk. for a vessel between 350 and 400 reg. tons. Vessels above this pay 10 mk. extra for every 100 reg. tons; accordingly, a vessel of 900 to 1,000 reg. tons pays 95 mk. Custom House officer's regular time for attendance upon vessels loading or discharging is: In the months of May, June, July, and August, from 6 a.m. till 8 p.m.; in September, from 6 a.m. till 7 p.m.; in October, from 7 a.m. till 5 p.m.; and in November and December, from 8 a.m. to 4 p.m. The charge for overtime is 50 p. an hour to every attending officer (now, 1909, increased to 1 mk.), and if the goods go into the bonded warehouse, the inspector's charge for like overtime is 3 mk. per hour.

Pro Forma Charges on a steamer of 620 net reg. tons, entering Wasa with a cargo of 1,210 tons of coal, and leaving for England with a cargo of 450 stds. deals, battens and boards:—

	Mk.	p.
Pilotage in by Rönnskär with a draft of 14 ft. 9 in.	62	10
Harbour pilotage	14	40
Pilotage out by Rönnskär with a draft of 16 ft. 6 in.	67	40
Wharfage	83	73
Harbour dues	248	00
Inward light dues	272	80
Tonnage dues (10 p. per reg. ton), payable once a year in the whole of Finland	62	00
Inward expedition fee	65	00
Custom House officer's "märkrulla"	20	00
Clearing in on overtime	8	00
Outward light dues	272	80
" expedition fee	65	00
Passport	3	00
Telegrams	5	28
Stevedore's bill for discharging (including insurance)	1,222	35
" " loading (including insurance)	1,670	00
Postage and stamps	5	00
Clearing	100	00
	4,246	86 = £168 10s. 0d.

Pro Forma Charges on a steamer of 620 net reg. tons, entering Wasa with a cargo of 1,203 tons of coal, and leaving light for another Finnish port:—

Russia—Wasa, or Nikolaistad (*continued*).

	Mk.	p.
Pilotage in by Rönnskär with a draft of 14 ft. 9 in.	62	10
Harbour pilotage	14	40
Pilotage out by Rönnskär with a draft of 10 ft. 6 in.	52	70
Wharfage	55	83
Harbour dues	248	00
Inward light dues.	272	80
Tonnage dues	62	00
Inward expedition fee	65	00
Custom-house officer's "märkrulla"	20	00
Clearing in on overtime	8	00
Outward light dues (11 p. per reg. ton)	68	20
Clearing out on overtime	8	00
Overtime search by custom-house officer	3	00
Stevedore's bill for discharging (including insurance)	1,218	34
Postage and stamps	5	00
Clearing	100	00
	2,263	37 = £89 16s. 0d.

Hankmosund is a loading place to the north, in the district of Wasa. Before going there vessels have to call at Wasklot for clearing. They then proceed by the Wasa-Ritgrund channel, passing by Grillskär and Ytteruddskär, where the pilot has to be changed. After loading they proceed to sea by Stubben. The harbour of Hankmosund is well sheltered.

WIBORG.

Wiborg, or Viborg, in lat. 60°43' N., long. 28°45' E., is situated at the head of a fjord, on the N. coast of the Gulf of Finland.

Population.—35,065.

Imports.—Sugar, coffee, salt, coal, wines, spirits, herrings, grain, etc.

Exports.—Timber, wood-pulp, bobbins, paper, butter, skins, chemicals, etc.

Accommodation.—The outer port, Trang sund, is about 8 miles from Wiborg. Vessels drawing 17 ft. can enter the outer port. Those drawing 14½ ft. can ascend to Wiborg. All foreign-going vessels loading timber are loaded in Trang sund and district; those loading wood-pulp, paper, and other export articles, are loaded in Wiborg. Vessels drawing above 17 ft. complete their loading in the outer road. Captains engage stevedores, who are to be had at Wiborg, Trang sund, and Koivusaari. Vessels are obliged to take a pilot; captains omitting to do so are fined. Pilots for Trang sund can be procured at the island of Hogland, about 60 miles distant. Vessels are bound to take pilots at Great Fiskar Island.

Port Regulations.—Vessels must anchor in the outer roads so as to keep the fairway open and to prevent crowding. Vessels in the port of Trang sund must be moored along the harbour by chains or hawsers, one from the stem and one from the stern, to the piles or mooring posts constructed for this purpose; and if several vessels are already moored to the piles then anchors have to be put out fore and aft. Masters must remove their vessels to another berth, when requested to do so by the harbour-master. Within six hours after arrival at Trang sund, or the inner harbours of the town, the jib-boom must be struck, lower yards topped and swayed, and top-yards close hauled; all boats projecting to be hauled in. As soon as a vessel has entered into harbour, and the search, where prescribed, been made, the master must report his arrival immediately, or, at the latest, on the ensuing day at the port-office, stating the vessel's name, burden, and cargo. Vessels laden with gunpowder, or volatile oils, must cast anchor on arrival

Russia—Wiborg (*continued*).

in the outer roads, or within the outer harbour of the town, where discharging is also to be effected, unless another place be directed by the harbour-master. Ships thus laden to hoist a red flag at the main mast head. Every vessel entering, under sail or tow, into the inner south harbour of the town, to drop anchor in the middle of the harbour, and then, by warping, proceed to the berth indicated by the harbour-master. For any damage incurred thereby the master of the vessel is accountable. Should he, during stormy weather, or at night, neglect or omit the prescribed anchoring, it will be considered, in estimating any damages, as an aggravating circumstance. From this obligation steamers are exempted, subject to shutting off steam outside the harbours and passing slowly and landing cautiously at their appointed berths. When warping vessels must not fasten their hawsers to the rails or crosstimmer of Åbo bridge or to lamp-posts. Every vessel moored at the quay or landing places to have fenders or loose skids put out over her side. Vessels are entitled to berth at the quays according to space and in turn of application to the harbour-master. When discharging or loading ballast, coals, bricks, lime, or such other materials, vessels must make use of tarpaulins, wooden spouts or portsails, properly stretched and spread, which have had the harbour-master's approval.

Pilotage.—Rates are based on tonnage and draught :—

			To or from Hogland.		To or from Great Fiskar.	
			Mk.	p.	Mk.	p.
Vessels drawing 7 ft. 10 in., from	100 to	150 tons	49	10	29	90
" " " " "	500 "	600 "	70	40	44	00
" " " " "	900 "	1,000 "	90	90	55	40
" " 10 ft. 10 in. "	100 "	150 "	58	70	35	90
" " " " "	500 "	600 "	80	00	50	00
" " " " "	900 "	1,000 "	96	20	61	40
" " 14 ft. 9 in. "	500 "	600 "	94	20	62	10
" " " " "	900 "	1,000 "	110	40	70	80
" " 19 ft. 8 in. "	900 "	1,000 "	122	80	84	80
" " " " "	1,400 "	1,600 "	135	40	94	40

From September 15 to May 10 these charges are increased by 25 per cent.

Port Charges.—Town Dues :—30 p. per reg. ton ; vessels calling for orders half dues. **Discharging Ballast :—**1 mk. 80 p. to 2 mk. per ton

Loading Steamers :—Deals, 3 mk. per standard ; battens and boards, 3 mk. 30 p. per standard ; small boards up to 5"×1", 3 mk. 70 p. per standard.

Sailing vessels usually engage the stevedore and men by the hour. **Dis-**

charging :—General and bulk cargoes, from 85 p. to 1 mk. 10 p. per ton. For clearing steamers at the Custom House a fee of 50 mk. to 125 mk. is charged. Bill of Health is not required. Vessels having a measurement bill in English reg. tons do not need the Finnish.

Pro Forma Charges on a steamer of 957 reg. tons from Cronstadt in ballast, and with cargo of deals, battens, and boards, to England :—

	Mk.	p.
Pilotage from Björkö to Trangsund	91	60
Harbour pilot	10	00
Custom House charges at Wiborg and pilot to sea.	498	86
" " " " Trangsund	24	00
Harbour dues	287	40
Stevedore's account for loading of 700 stds.	2,383	46
Telegrams and postage	24	75
Steam-launch	25	00
Clearing fee	100	00

3,445 07 = £136 13s. 9d.

SPAIN.

Spain is in the south-west of Europe. It includes the greater part of the Iberian Peninsula, the Canary Islands and the Balearic Islands, having an area of 194,783 square miles, with a population of 18,618,090. It has an extensive coast line (1,317 miles in length), and many fine harbours. The constitution is that of a limited monarchy.

Commerce.—The value of the trade of Spain in 1907 was £74,536,003, made up of imports valued at £37,301,968 and exports at £37,234,035. The total Customs duties, dues, and special taxes collected by the Customs authorities during the same period amounted to £8,486,432. The Customs duties in some cases levied on gross weight, but in the majority of cases it is on actual net weight of goods, except where official tare allowances are stated in the Schedule of the Tariff Act, when the duty is levied on the gross weight, less tare allowance. Imports from the United Kingdom into Spain are subject to the minimum tariff, and British merchants have all the advantages conceded to those of any European State, except Portugal.

Mercantile Marine.—The commercial navy of the Kingdom includes steamships above 50 ton reg. amounting to 423,000 tons, and sailing vessels above 50 ton reg. amounting to 28,700 tons. There are in addition a large number of small craft engaged in the coast trade, and with the islands and ports of the Mediterranean Sea.

Internal Communications.—There are about 9,190 miles of railways open for traffic. The property in these lines is in the hands of private companies. The Guadalquivir is the only river of the peninsula that is navigable to any distance from the sea, vessels being able to ascend it as far as Seville. Post telegraph and telephone services have been established on modern lines.

Currency, Weights and Measures.—In 1868 the money of Spain was assimilated to that of France, Italy, Belgium, and Switzerland. The peseta was declared the monetary unit, this in turn being divided into 100 centimes. The peseta of 100 centimes is of the nominal value of a franc, $9\frac{1}{2}d.$, or 25.225 pesetas to the £; the actual value is, however, only about $7\frac{1}{2}d.$, and the average exchange $28=£$. Theoretically, there is a double standard of value, gold and silver, the ratio being $15\frac{1}{2}$ to one. As, however, the coinage of the 5 peseta silver piece (the only silver coin which is legal tender) is restricted, the standard of value is not in practice maintained. The subdivisions of the old coinage, which is still met with on occasions, are as follows:—

100 Centimes	= 1 Real	= $2\frac{1}{2}d.$	
10 Reals	= 1 Escudo	= 2s. 1d.	
20 Reals	= 1 Dollar (duro)	= 4s. 2d.	4 Dollars 16 Reals = £1.
1 Doubloon	= £3	6s. 8d.	

The weights and measures in general use are those of the metric system. In addition the old Spanish weights and measures are largely used. They are the libra=1.014 lb.; 100 libras=1 quintal=101.44 lb.; the fanega=1.52 imperial bushels, and the arroba mayor (for liquids)=3.54 imp. gallons.

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It is sometimes necessary to ascertain a vessel's tonnage under the Spanish rules of measurement. This may be readily done by adding 23 per cent. to the British register tonnage. If, however, extreme accuracy is desired, the following rule may be adopted :—

Let *A* be the length from stem to stern-post ; *B* the breadth measured across the main deck amidships ; *C* the breadth, but measured from outside, that is, including the thickness of the sides of the vessel ; *D* the depth of hold.

$$\text{Then the Spanish tonnage} = \frac{\frac{1}{4} (A + 3 B) (C) (D)}{70 \cdot 19}$$

Or, one quarter of the length added to three times the inside breadth, multiplied by outside breadth, and by depth of hold ; divided by 70·19. If the depth of the space between decks should be less than 6 ft., 10 per cent. will be added, and if more than 6 ft., 14 per cent. If vessels of large burden, without inside boarding, 8 per cent. will be added ; if with much dead rise of floor timbers, 5 per cent. will be deducted.

Port Charges.—Transport Tax.—All vessels arriving at Spanish ports in ballast are now admitted free of all port dues and charges whatever ; consequently, British ships conveying outward freights to the western ports of France can proceed to the northern ports in Spain for cargoes of iron ore, etc., and thus compete with French vessels in the carrying trade to Great Britain.

In lieu of the former charges of light, anchorage, loading and unloading, entrance, consumption and pratique dues, the following tax has, in accordance with the provisions of the Transport Tax of 1900, modified by Royal order, January 1, 1908, been imposed on all cargo or passengers landed or loaded, according to the different classes of navigation.

The dues will be levied on vessels loading or landing cargo and / or passengers at any port or place authorized to this effect by the Custom House in Spain. These dues are divided into three classes :—

First Class.—Coastwise navigation between Spanish ports, or to the Balearic and Canary Islands, and penal settlements in Africa.

Second Class.—Those that trade between above-named ports and any others in Europe, or to the Asiatic or African coasts of the Mediterranean, African coasts on the Atlantic as far as Cape Mogador, and American ports with the exception in the case of the last named of sections 1 and 2, viz. :—Minerals, slag, iron pyrites, and other ores on which they will pay third class tariff.

Third Class.—To and from Spanish ports to any others in the globe not mentioned in former classes.

PASSENGERS.

	1 Pts.	Class 2 Pts.	3 Pts.
<i>First Class Tariff Distance—</i>			
Passengers going from one port to another in the Peninsula and Balearic Islands, or going to, or from, them to the Canary Islands and Spanish ports.			
Distance of 200 miles	1·00	0·50	0·25
“ „ more than 200 miles	1·50	1·00	0·50
<i>Second Tariff—</i>			
Passengers to or from foreign ports in the Mediterranean and African Coast as far as Cape Mogador	3·00	1·50	0·75
For other European and American ports	4·00	2·00	1·00
<i>Third Tariff—</i>			
Passengers to or from other countries	25·00	15·00	5·00

Spain.

GOODS.

Per ton of
1,000 kilos.
Discharging Loading
Pts. Pts.

First Class Tariff Distance—

All kinds of minerals, coal and coke, manure, limes, cement, paving bricks, clay materials, and cement for building construction	0-15	0-15
Common salt	0-75	0-50
Empties	free	free
Every other description of goods and coin	0-75	0-75

Second Class—

Iron ores, iron slag, and iron pyrites	1-00	0-50
Other kinds of mineral ore	1-50	1-50
Coal and coke	0-50	free
Limes, cement, paving bricks, clay materials, and cement for building construction	0-50	"
Pig iron	2-00	"
Lead in pigs, and copper ore	2-00	1-00
Common salt	3-00	0-10
Manures	2-00	free
Cereals and flour	4-00	"
Wine	4-00	2-00
Common soap	5-00	free
Cotton textiles	5-00	"
Hemp and flaxen textiles	5-00	"
Textiles of wool and hair	5-00	"
Silk goods	5-00	"
Wood in rolls, boards, or planks	5-00	"
Paper and paper goods	5-00	"
Skins, hides, and boots	5-00	"
Tools and machinery	5-00	"
Dried fish	5-00	"
Vegetables and fruit	5-00	"
Sugar	5-00	"
Ground pepper	5-00	"
Spirits, spirits of wine, liquors, beer, cider, chacoli, and vinegar	5-00	"
Preserves, sausages, chocolate, eggs, sweets, Italian paste, bread, biscuits, cheese, and honey	5-00	"
Fans, canvas shoes, matches, fishing lines, playing cards, cigar cases, umbrellas, sunshades, hats, and trimmings	5-00	"
Cast and forged iron, old rails, manufactured iron and steel of all sorts, weapons, and firearms	5-00	"
Empties	free	"
Other goods and coin	5-00	2-50

Third Class—

Iron ores, iron slag, and iron pyrites	1-00	0-20
Other kinds of mineral ore	2-00	1-00
Coal and coke	2-00	free
Lime, cement, paving bricks, clay materials, and cement for building construction	0-50	"
Pig iron	2-00	0-50
Lead in pigs and copper ore	3-00	1-00
Common salt	3-00	0-10
Manures	2-00	free
Cereals and flour	5-00	free
Wine	5-00	2-50
Common soap	7-00	free
Cotton textiles	7-00	"
Hemp and flaxen textiles	7-00	"
Textiles of wool and hair	7-00	"
Silk goods	7-00	"
Wood in rolls, boards, and planks	7-00	"
Paper and paper goods	7-00	"
Skins, hides, and boots	7-00	"
Tools and machinery	7-00	"
Dried fish	7-00	"
Vegetables and fruit	7-00	"
Sugar	7-00	"
Ground pepper	7-00	"
Spirits, spirits of wine, liquors, beer, cider, chacoli, and vinegar	7-00	"

GOODS—(continued).

	Per ton of 1,000 kilos.	
	Discharging Pts.	Loading Pts.
Preserves, sausages, chocolate, eggs, sweets, Italian paste, bread, biscuits, cheese, and honey	7-00	..
Fans, canvas shoes, matches, fishing lines, playing cards, cigar cases, umbrellas, sunshades, hats, and trimmings	7-00	..
Cast or forged iron, old rails, manufactured iron and steel of all sorts, weapons, and fire arms	7-00	..
Empties	free	..
Other goods and coin	7-00	5-00

Included in manures are nitrate of soda, sulphate of potash and soda, phosphates and superphosphates of lime, and chloride of potash.

Since the new tax came into force it has been customary to insert in charter-parties that merchants should pay the tax, but the experience by observation of the British Consul at Cartagena shows that it would be better for shipowners and merchants if such a clause were left out of the charter-party, and that, instead, the rate of freight should be augmented in proportion.

Vessels entering Spanish ports in distress, landing cargo and / or transshipping same, are exempted from payment of these dues.

When chartering for Spain, shipmasters should bear in mind that they are liable to pay the import duty on cargo delivered unless otherwise stipulated in the charter-party. The following clause would provide against this :—"The consignee shall pay the duty required by the Spanish Customs." Vessels proceeding from one Spanish port to another are also liable to the same charge. In addition to the foregoing dues, the local Harbour Dues, where such exist, will be imposed on vessels discharging and / or loading.

Quarantine.—Vessels clearing from a British or foreign port to Spain should first ascertain if the port of departure is "suspected" by the Spanish Quarantine authorities. If this should prove to be the case, and the ship is bound for a port on the south or east coast, it will always be found the cheapest plan for the vessels to proceed to Port Mahon, Minorca, one of the Balearic Islands, and there perform the quarantine of seven days. Vessels entering Spanish ports in distress, *force majeure*, are admitted to free pratique if they arrive with a clean bill of health, and with no epidemic disease on board. Vessels having a clean bill of health, but which have lost some individual by death during the voyage, will be admitted to free pratique provided the captains or masters satisfactorily prove that such death was not caused by some contagious disease. Vessels arriving without a bill of health will be given free entry on proof by the captain or master that the absence of the bill of health was involuntary and inevitable. In all cases these modified rules will only apply to vessels arriving from clean ports, in good sanitary condition, and those seeking entry under them must remain completely cut off from all communication, excepting that with the authorities, until their explanation has been considered and accepted by the port officials. The following regulations have been drawn up for the guidance of captains and masters :—

"1. In case of a death during the voyage on a vessel carrying a professor of medicine and surgery, the captain or master shall show to the health director at the port of arrival the medical log, which must set forth all the data necessary for forming the true diagnosis of the illness, so as to

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judge therefrom whether the malady be infectious or contagious. If there be no doctor on the vessel, the captain or master, and at least two persons of those who may have assisted the patient until his death, shall testify on oath, before the port director, secretary, interpreter (if the vessel be foreign), and a medical commission named by the Provincial or Municipal Sanitary Junta, as the case may be, the symptoms they may have observed in the illness which caused the death, in order that the proper decision may be come to by the persons receiving the deposition.

"2. If there be a difference between the number of persons brought by the vessel and the number mentioned in the bill of health, then, having examined the latter, the roll, and the log, the director, secretary, and interpreter (if the vessel be foreign), shall take the sworn deposition of the captain or master, and of at least three witnesses belonging to the vessel, as to the causes of the accident, and the sanitary treatment of the vessel shall then be decided. If the vessel be foreign, the Consul of the respective nation shall guarantee the identity of the deponents. And if there be no Consul or representative, the guarantee shall be given by the consignee. Vessels ordered into quarantine have to pay 6 c. per reg. ton per day."

Custom House Regulations.—1. All captains of vessels, on entering Spanish waters (six miles from the coast), are obliged to have, ready drawn up, a manifest in Spanish, French, English, or the language of the nation to which the ship belongs, and to present the said manifest to the Custom House officers, if called upon to do so. This manifest must be legalized by the Spanish Consul in port of lading, or, in default of any, by the local authorities.

In the said manifest shall be set forth :—

(a) The class and name of the vessel ; her tonnage, nationality, and crew ; the name of the captain ; and the port or ports from whence she comes.

(b) The port or ports of destination of the goods.

(c) The number, class, marks, and numeration and gross weight, in kilograms, of all packages on board, including the venture goods brought by the crew on their own account, the class and kind of goods, and the names of the shippers and consignees, or a statement that the goods come to order—all separately for each port of destination. Passengers can only be consignees of the goods they carry with them, the duty on which must not exceed 250 pesetas, and the crew can only be consignees of their venture goods, the duty on which must not exceed 100 pesetas. The number and weight of the packages shall be set forth in words and figures. The words merchandise and similar vague expressions shall not be used. Cargo in bulk shall be set forth according to their weight, tale, or measure.

(d) The total number of passengers and their packages separately for each port of destination.

(e) The class and quantity of iron carried as ballast ; and

(f) The ship's provisions and stores, and the effects for the defence of the vessel. The surplus provisions shall be landed officially under the prescribed formalities, if the captain refuse to pay the duty. With regard to tobacco, one kilogram for each member of the crew, and three for the captain, are allowed to be brought as rations, and shall remain deposited on board the vessel. The captain may also

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bring as much as three kilograms for each member of the crew, declaring them as surplus rations, in which case the tobacco shall be deposited in the Custom House until the vessel sails. If he brings larger quantities of tobacco, he shall pay the tariff duty on the excess. In the case of damage to the goods, the captain shall state at the bottom of his manifest that he has made, or intends to make, the necessary protest before the court which takes cognisance of commercial matters, at the first port at which he may touch, of which protest he shall present legal testimony to the Administrator of the Custom House within three days after the admission of the vessel to free pratique. Bulk shall not be broken until the above formalities are concluded.

If the captain has not the manifest drawn up on entering Spanish waters, or does not present it on receiving the entrance visit, he is liable to a fine of 1,000 pesetas. If the manifest be defective, the fine shall range from 100 to 1,000 pesetas.

2. The captain shall also present on arrival, or be liable to a fine of 100 pesetas, a list of the names of the passengers who are to land at the port, and of the number of packages belonging to each one, setting forth also the quantity of tobacco belonging to them.

3. The captain shall admit on board his vessel a guard of Custom House officers, and shall allow the Administrator of the Custom House, or persons appointed by him, to make one or more examinations of the vessel to place the official band on, and to seal the hatchways, bulk-heads, and other departments, and to examine the log-book, inventory, bills of lading, and other papers on board, which the captain shall at once hand over on being called upon to do so.

4. The captain shall, within 24 hours counted from the admission of the vessel to free pratique, present two copies of the manifest in Spanish and on the paper prescribed for that purpose. If he neglects to do so, or if the copies do not agree with the original, he is liable to a fine of 250 pesetas, and must also present them or make them again, according to circumstances. If the vessel be going to several ports, the copies shall be three, in order that one of them, authorized by the Administrator, may be presented at the transit Custom Houses so as to avoid a fine of 500 pesetas. The captain shall be responsible for discrepancies. With regard to the said Custom Houses, the captain shall only include in the copies of the manifest, to be presented within the space of time and in the form aforesaid, the goods for each Custom House; and if the copies do not agree with the general manifest he shall pay a fine of 50 pesetas, and be obliged to make fresh copies.

5. No made-up clothes or woven goods can be carried in transit except in vessels which, measuring at least 120 metrical tons, call at Spanish ports for the purpose of completing their cargoes for America or Asia. Nor will the carrying of prohibited merchandise be permitted, with the exception of the various kinds of tobacco coming from abroad, which will be allowed under the following conditions:—

(a) The vessel must be a steamship, and be of at least 300 tons burthen.

(b) The master must be provided with a certificate of the Spanish Consul at the port of shipment, in which must be inserted the number, class, marks, numerations, and gross weight of the packages, the

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quantity and quality of the tobacco, the name of the shipper, and of the port of destination, and this certificate shall be viséd at all the Spanish transit Custom Houses.

(c) The same particulars must be stated in the captain's manifest, and it will be necessary for the captain to enter into a bond at the first Custom House at which he touches, in order to prove the discharge of the cargo at the port of destination, together with a certificate of the Spanish Consul, and this bond must be at the rate of 14 pesetas per kilo., whatever be the class or real value of the tobacco.

(d) That the port of destination shall not be the port of lading, nor any of those at which the ship may have touched during her voyage.

(e) That on the wrappers of the packages must be noted the gross weight of each, which must in no case be less than 46 kilos., as well as their destination.

(f) That all the packages must be placed in the ship's hold, properly separated, so that they may be easily examined at the transit Custom Houses.

The transit of other merchandise will be permitted in vessels, either steam or sailing, under the condition of their not being of less than 300 metric tons, with no other restriction except that the port of destination be not the port of lading, or any one at which the vessel may have touched during her voyage.

6. No ship shall touch at any Spanish port which is not habilitated for the goods she may have on board, unless forced to do so by circumstances beyond her control, which must be stated and proved in due form, without relieving the captain from the obligation of presenting immediately his manifest. In this case the Customs officers are to be admitted on board, and they will not allow the loading or unloading of any merchandise.

7. Moreover, the captain will incur a fine in the following cases, and to the following amounts :—

1. For changing his anchorage without the permission of the Customs authorities, he shall pay from 50 to 250 pesetas, at the discretion of the Comptroller.

2. For not keeping a log, and other papers mentioned in rules *n.* 3, the captain shall pay 250 pesetas, and shall not be allowed to leave until they are presented.

3. For not inserting in the manifest the ingots of iron carried as ballast, or for not stating their weights correctly, the captain shall pay from five to ten times the tariff dues, according to the increase or decrease.

4. When ship's stores are not reported in the manifest, the captain shall pay from five to ten times the corresponding tariff dues.

5. For each package that is found on board and not reported in the manifest, the captain shall pay from five to ten times tariff duties on the article contained therein.

6. For each packet reported in the manifest and not found on board, the captain shall pay 750 pesetas.

7. For the breakage, removal, or alteration of official seals or bands on the hatchways, the captain shall pay 250 pesetas, in addition to any other penalty he may have incurred.

8. For breaking official bands placed on packages on board, the

Spain.

captain shall pay 750 pesetas, as well as any other fines he may have incurred.

9. For unlading, without the Customs' permission, goods reported in the manifest, the captain shall pay double duties ; and if the same were not reported, from five to ten times the duties.

10. When the consignee's declaration as regards loose cargoes agrees with the result of the Custom House examination, and a decrease is found in the manifest, the captain shall pay double duty for the difference. If the difference should be an increase, he shall pay duty on the excess, as shown in the manifest.

11. For any excess in the gross weight of more than 10 per cent. the captain shall pay ten times the unlading dues, and he shall pay the same for excesses occurring on the same scale in loose cargoes, as well as any other fines he may have incurred according to the foregoing rule.

12. For each packet declared in transit, and not found at the time of the search, the captain shall pay 750 pesetas, and in the case of loose cargoes, from five to ten times the tariff dues on the missing part.

13. For each package found on board, and not reported in the Transit Manifest, the captain shall pay from five to ten times the tariff duties on the same.

14. For the transfer from one vessel to another, without Customs' permission, of foreign goods liable to duty for goods of the country liable to exportation dues, the captain will pay from five to ten times the tariff duty.

15. For the same fault in the case of foreign or national goods duty free, the captain shall pay from 50 to 500 pesetas, at the Administrator's discretion.

16. For discrepancies, as regards packages, or goods in loose cargoes, discovered during transhipment to have been omitted in the manifest, see clauses 5 and 6 of this rule.

17. If the transhipped goods are not found on board of the receiving ship after clearance, the captain will pay 750 pesetas for each package, and from five to ten times the duty in case of loose cargoes.

18. The captain will pay double or quadruple duties in the following cases :—

(a) For manufactured tobacco not reported in the manifest.

(b) For surplus stores which remain on board, or are re-embarked and are not to be found on the outgoing visit being made.

(c) If tobacco, stated to be carried in transit, be not found on the anchorage visit being made.

19. The conveyance of leaf tobacco is prohibited. Any tobacco of this sort found on board, except in the case provided for by rule 5, will be confiscated, and the captain shall pay a fine of from twice to four times the tariff duty.

20. Tobacco of all kinds brought in transit to a licensed port in ships of less than 300 metrical tons, will be confiscated, and the captain shall incur a fine of from twice to four times the duty.

Custom House Rules.—"1. All masters of vessels, laden or in ballast, coming from foreign ports, even when the cargoes are in transit for deposit, transhipment, or immediate use, must bring the general manifest ordered in the Custom House Regulations, countersigned by the Spanish

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Consul of the port of departure ; and if there is no Spanish Consul, by the local authority. The manifest, as a general one, must comprehend all the cargo, and private adventures of the crew brought in the vessel. Only one manifest will be countersigned by the Consul for every voyage.

" 2. The master of a vessel measuring 80 metrical tons and upwards, not having drawn up the manifest on arriving within Spanish waters or port of Spain, or having drawn it up without the signature ordained in the preceding article, will be fined 1,000 pesetas.

" 3. The want of manifest, countersigned, in cases of vessels measuring less than 80 metrical tons, will be fined from five to ten times the duties on the effects brought when the same is discovered within the district of the Custom House ; and when the discovery takes place within the Spanish waters, it will be considered as contraband or fraud, according to circumstances.

" 4. The same want, if the vessel measures more than 80 metrical tons, and brings tobacco, woven goods, or colonial produce (sugar, cocoa, coffee, cinnamon, cloves, pepper, and tea), will be punished with a fine from five to ten times the duties on these merchandises when the discovery takes place within the district of the Custom House ; and with the penalties assigned for the crimes of contraband and fraud, according to circumstances, when the apprehension takes place within the jurisdictional waters. These penalties do not exclude that which is prescribed in article 2. Vessels putting into any port by reason of distress, duly justified, will be exempted from the penalties described in articles 2, 3, and 4 ; but the masters are bound to draw up and present the general manifest within the term which will be assigned to them.

" 5. In case of bales or cargoes containing tobacco, woven goods, and colonial produce (sugar, cocoa, coffee, cinnamon, cloves, pepper, and tea) being stated in the manifest as containing another sort of merchandise, in conformity with the bill of lading, a fine from five to ten times the duties will be imposed. The consignees of the merchandise are responsible for this penalty, and the masters will only pay it when, on drawing the manifest, they depart from what is stated by the shippers in the bill of lading.

" 6. The dead weight declared in the manifest will serve as the basis for ulterior operations ; and the differences in more or less, if exceeding 10 per cent., will be fined as if they exist in the net weight, according to cases 2 and 3 of Art. 209 of the Custom House regulations ; the penalties being paid by the consignees of the merchandise if there is conformity between the bills of lading and manifest, and by the master when he departs from what is stated in the bills of lading.

" 7. The consuls, vice-consuls, and consular agents of Spain in foreign countries, the administrators of Custom Houses in the provinces of Spanish colonies, and the Accountants of the Registers in the free ports, will not countersign the manifests presented to them if they are not drawn up in conformity with article 46 of the regulations, and will approve with their signature, and seal all the notes, errors, or alterations contained in, the manifests, rendering useless all the blank lines, in order to avoid the abuses which might be committed. They will report to the Director-General of Customs by the post of the same day the manifest is delivered to the captain, stating the number corresponding to the manifest according to the register."

Spain.

Manifests.—The following copy of a manifest will serve as a guide to captains and masters in preparing these, in order to meet the requirements of the Custom House authorities.

**MANIFEST OF THE BRITISH THREE-MASTED SCHOONER THOMAS, OF GLASGOW,
222 TONS, EIGHT MEN, AND THOMAS SMITH, MASTER, FROM NEW
CASTLE AND LONDON.**

No. and Description of Packages.	Marks.	Nos.	Gross weight in kilogrammes.	No. of Packages and Gross Weight in Writing.	Class and Description of Merchandise.	Where Shipped.	Shipper.	Consignee.
57,000 loose	—	—	170,520	FOR MALAGA. Fifty-seven thousand, one hundred and seventy thousand five hundred and twenty kilogrammes.	Firebricks	Newcastle	J. Robinson	E. Loper
In bulk	—	—	101,580	One hundred and one thousand five hundred and eighty kilogrammes.	Coke	Newcastle	J. Robinson	E. Loper
20 cases	G	1-20	12,000	Twenty cases, twelve thousand kilogrammes.	Machinery	London	J. Jones	P. Gomez
20 casks	PG	21-40	30,000	Twenty casks, thirty thousand kilogrammes.	Machinery	London	J. Jones	P. Gomez
210 pieces	G (within a diamond)	41-250	134,000	Two hundred and ten pieces, one hundred and thirty-six thousand kilogrammes.	Machinery	London	J. Jones	P. Gomez
In bulk	—	—	100,000	FOR ALMERIA. One hundred thousand kilogrammes.	Coals	Newcastle	S. Robinson	Order
50 barrels	FF	1-50	30,000	Fifty barrels, thirty thousand kilogrammes.	Soda ash	Newcastle	W. Brown	F. Fernau

NOTE.—I purpose making a protest on account of suspicion of sea damage to cargo.

TOTAL OF PASSENGERS, WITH THEIR BAGGAGE AND PORTS OF DESTINATION.

	Number of Passengers.	Number of Packages.
For Malaga	3	8
For Almeria	1	2

PIGS OF IRON CARRIED AS BALLAST.

100 pigs, weighing 5,079 kilogrammes.

PROVISIONS AND STORES.

	Quantity.		Quantity.
Oils	50 kilos.	New cordage	253 kilos.
Spirits	12 litres	Chocolate	—
Spare anchors	3	Biscuit	761 kilos.
Rice	46 kilos.	Grain	—
Sugar	46 "	Flour and Meal	100 kilos.
Pitch and tar	2 hlf. brls.	Eggs	—
Candles	6 kilos.	Dried vegetables	100 kilos.
Spare chains	60 fathoms	Tins of preserved provisions	50 tins.
Hemp, tow, or waste	12 kilos.	Wood	1,016
Coals	5,079 "	Spare spars	3
Charcoal	—	Salt	12 kilos.
Fresh meat	—	Tallow	12 "
Butter	50 kilos.	Cider	—
Potatoes	203 "	Tobacco, in cigarettes	—
Macaroni and vermicelli	12 "	" cut	2 kilos.
Salt fish	51 "	" in cigars	100
Salt beef and pork	761 "	" for chewing	5 kilos.
Beer, ale, and porter	48 bottles	Snuff	—
Tea	15 kilos.	Paints	152 kilos.
Spare sails	6 "	Soap	12 "
Vinegar	13 litres	Cheese	9 "
Wine	24 bottles	Nails	25 "
Canvas	3 bolts		

*Spain.***ARMS AND AMMUNITION FOR THE DEFENCE OF THE SHIP.**

2 muskets, 1 fowling piece, 1 pistol, 2 revolvers, 4 cutlasses,
1 cannon, 6 lbs. ammunition, 6 rockets, 6 blue lights.

THOMAS SMITH, Master.

At Sea, off.....dated.....19....

Emigration.—Every shipowner who desires to engage in the transport of emigrants from Spanish ports must obtain a permit from the Ministro de la Gobernacion, which will only be granted after having been approved by the Superior Emigration Council. This license will cost from 1,000 to 3,000 pesetas per annum according to the tonnage of the vessels employed, and security in the sum of 50,000 pesetas must be deposited for the carrying out of the provisions of the same. Foreign owners must delegate a Spanish subject, resident in Spain, to represent them, and such agent must be invested with full authority, and must be prepared to accept responsibility on behalf of the owner. This agent must be (1) of full age, in the enjoyment of civil rights, and one who has not been sentenced by any criminal court, and (2) he must deposit a security of 25,000 pesetas. A public official may not be appointed as emigration agent. The security of the owners will be liable for the acts of the representatives. There must be no recruiting of emigrants, and no propaganda in favour of emigration.

Space.—The emigrants are to be lodged between decks, the height of which shall not be less than 1·90 metres. Each emigrant over ten years of age is to be allowed a space area of 2·75 cubic metres, but, in the calculation of this, no excess of height above 2·50 metres is to be taken into account. At the same time, vessels having cool chambers and not engaging in the conveyance of cattle, and which are, in other respects, well ventilated, will be allowed to convey 8 per cent. more passengers than would otherwise be permitted.

In computing the 2·75 cubic metres, or such space as may result from the application of the increase allowable under the preceding regulation, account shall be taken of the space occupied by sleeping berths and also of passages leading to same (0·60 to 0·70 metre in width), and of such other spaces in the same or in other covered places that may be vacant, in which the emigrants can stay even in rain and bad weather. The additional space referred to shall not exceed 0·50 cubic metre per passenger over ten years of age, so that in no case may the space intended for each emigrant in the dormitory be less than 1·80 cubic metre, even when applying the aforesaid allowances of 8 per cent. The surface per individual corresponding to the said space of 0·50 cubic metre, in addition, shall in no case be less than 0·45 square metre. And each emigrant must also have a minimum deck space of 0·45 square metre, including the space occupied by awnings, groups of deck cabins, and upper deck, provided same are readily accessible, properly constructed, and provided with bulwarks. The emigrants' quarters must be provided with hatchways which, together with other openings or ventilation tubes in any space, must amount to 4 per cent. of the area of such place, or, in the case of newly-built vessels, of 5 per cent.

The stairs in such hatchways shall not be less than 0·70 metre in width, unless they are double, facing each other, and shall be available for use at all times, including loading and unloading of goods. Such stairs shall have an iron hand-rail, up to the height of which a sail-cloth shall be firmly fixed. The hatchways of the holds shall be firmly closed during the voyage,

Spain.

and covered by tarpaulin, preventing unpleasant emanations ; when opened for loading or unloading they must be protected by wire netting.

In every space in which over 25 and under 100 emigrants are accommodated, there must be at least one iron ventilator ; two, if there are 200 emigrants, and four if more than 200. The diameter of such ventilating tubes must not be less than 20 cm. ; they must be raised 2 metres above the level of the deck.

Each emigrant over 10 shall have a berth, 1·80 to 1·83 metres long by 0·50 to 0·53 in width, inside measurement. Two children of the same sex under ten and over two may occupy one berth. Children under two must occupy the berth of the person accompanying them.

The berths must be of iron, strongly built and fixed, and clearly numbered. Each berth shall be provided with mattress, pillow, and blanket.

Not more than two rows of berths may be placed where the height does not exceed 1·90 metre. Where the height is 2·50 metres, or over, three rows may be arranged, provided the following spaces are maintained:—

	Metre.
From the floor to the lower part of the under berth	0·40
From the top of said berth to the lower part of the middle one	0·60
From the top of the middle berth to the lower part of the uppermost one	0·60
From the top of the latter to the ceiling	0·60

No emigrants' berths may be installed in the neighbourhood of the engines and boilers, unless the arrangements are such that there can be no possible injury to the health of the occupants.

If possible in the women's quarters and infirmaries, special berths shall be installed, 1·83 metre long by 0·80 metre wide, in the proportion of 6 per cent. of the total berths, for women with young children.

The passages giving access to the berths in general must at least be 0·70 metre wide, as well as those surrounding the hatchways. Passages leading only to certain berths must be at least 0·60 metre wide. These passages must always be kept clear, but emigrants shall be allowed to take their luggage, containing necessary clothes, to their dormitories.

Unoccupied portions of the passengers' quarters may be used for stowing goods, a partition being made separating such portion. Living or dead animals, or explosive or inflammable or evil smelling goods may not be stowed here.

The men's and women's quarters shall be duly separated ; families shall, if possible, be separately accommodated from single men and single women. Boys over seven shall be placed with the men, and girls of whatever age with the women. For calculating space two children between two and ten shall be reckoned as one emigrant ; children under two are not counted.

Foreign vessels authorized to ship emigrants from Spanish ports, not having Spanish-speaking stewards, may, if they ship more than 100 Spanish emigrants, be required to take a Spanish steward for each cabin, or section, or group of more than 100 men, and a Spanish stewardess for each similar section of women. Such service may not be rendered by the emigrants or other passengers. The maintenance and wages of such Spanish staff shall be at the charge of the owner, and shall be the same as for the same class of staff on the vessel. The owner shall be bound to bring back such staff to the port of shipment, board and wages being paid until arrival there. On starting, one half month's pay shall be advanced.

Spain.

There shall be four lavatories, or one with four compartments, having independent inlets and outlets for water. These lavatories shall be available to emigrants during the day, and the supply of fresh water shall be as follows : Up to 300 emigrants, one hour per day ; from 300 to 600, two hours ; from 600 upwards, three hours.

In addition, there shall be baths and douches for men and women.

For the use of emigrants there shall be duly separated two places for w.c.'s, one for men and one for women, which shall be in the following proportions :—

	Men.	Women.	Total.
Up to 100 emigrants	2	1	3
From 100 to 250	3	2	5
„ 250 to 450	5	2	7
„ 450 to 700	6	3	9
„ 700 to 1,000	8	4	12

From 1,000 upwards, for each 200 passengers in addition one additional w.c. each for men and women.

There shall be half as many urinals as w.c.'s for men.

There shall be flowing water, and the discharge shall be outside the ship.

Emigrants may not be transported together with cattle, or living or dead animals in excess of the number requisite for the ship's supply during the voyage.

Provisions.—Emigrant ships must carry $1\frac{1}{2}$ times the quantity of provisions necessary for the whole number of emigrants carried, in proportion to the length of the voyage. Captains must send in to the Local Committee a signed list in duplicate, detailing the provisions and supplies carried, with the quantities. Samples may be taken for examination and analysis. Foreign vessels transporting emigrants must take in Spain the following fresh provisions required, in proportion to the number of passengers embarked :—Meat, olive oil, rice, macaroni, flour, vegetables, fruit, sugar, wine, and vinegar. The wine supplied to emigrants must be of Spanish origin. The bread must be fresh.

The emigrants' food must be provided in three meals per day and shall not be less than 1,643 grams in weight per emigrant over ten daily. Children from two to ten shall receive half rations.

A sufficient quantity of sterilized milk, eggs, etc., must be taken as may, in the opinion of the doctor, be necessary for the feeding of infants under two, and patients in hospital.

The composition of the meals shall be varied during the week, and they shall be properly seasoned. Fresh meat must be served at least five days a week.

The kitchen utensils shall preferably be of galvanized iron, and if made of copper they shall be thoroughly tinned. Those for the use of emigrants shall be of galvanized or enamelled iron.

For the preservation of provisions requiring it, there shall be a cool chamber capable of taking 5 kilos. of ice per emigrant.

Water.—Water shall be supplied at the rate of 5 litres per day per person (passengers and crew), including calling at intermediate ports. The same shall be kept in iron tanks in a perfect state of cleanliness. A distilling apparatus shall be carried, capable of producing 5 litres of water daily per person (passengers and crew).

Spain.

Hospital Accommodation.—In the infirmary, men's and women's quarters are to be perfectly separate, and infectious diseases to be treated in a separate department, subject to the sanitary regulations legally provided. It is not necessary that, before the departure of the vessel, more than one half of the prescribed infirmary berths be erected. These berths must be accessible lengthwise. Each infirmary berth shall be provided as follows:—A frame of stretched sail-cloth; a mattress of wool or vegetable fibre; two pillows; two sets of sheets and pillow-slips; one wool blanket; one spittoon of enamelled iron; one crockery frame of galvanized copper.

Sick and convalescents shall be supplied free with special food and medicine, as prescribed by the ship's doctor. The doctor may also order supplementary special rations for women and children, either on account of their state of health, or disturbances caused by the voyage.

ADRA.

Adra is in lat. $36^{\circ}46'$ N., long. $3^{\circ}2'$ W.

Population.—8,500.

Imports.—Coal, cotton, yarns, manures, etc.

Exports.—Lead, calamine ore, almonds, grapes, etc.

Accommodation.—The coast in this neighbourhood is very dangerous, and has been the scene of innumerable shipwrecks. The anchorage is a little W. of the town, opposite to the lead smelting works, in 12 fathoms. With the wind strong from the W., shipmasters should immediately proceed to sea. Daily discharge, 200 tons.

Pilotage.—Not compulsory. 30 ptas.

Port Charges.—Tonnage Dues:—On cargo discharged, 25 c. per ton. **Shipbrokers' Entrance and Clearance:**—100 ptas. **Commission:**—On freight, 2 per cent. **Discharging:**—Coal, 1s. per ton; coke, 1s. 3d. per ton. **Loading:**—Lead, 10d. per ton; fruit, 1s. per ton. **Stevedore:**—Loading, 9½d. per ton; discharging, 1s. per ton. **Labour:**—6 ptas. per man per day.

Pro Forma Charges on a steamer:—

	Ptas.	c.
Pilotage	30	00
Discharging 789 tons of coal at 1s.	1,104	60
Transport dues, at 50 c. per ton	394	50
Broker's account	100	00
Hire of boat, 5 days at 5 ptas.	25	00
Interpreter	50	00
Consul's bill	56	00
Agency	150	00

1,910 10 = £75 15s. 9d.

AGUA AMARGA.

Agua Amarga, in lat. $36^{\circ}56'$ N., long. $1^{\circ}55'$ W., is 15 miles from Garrucha.

Export.—Iron ore.

Accommodation.—Agua Amarga is a private loading place, belonging to the Compania Minera de Sierra Alhamilla-Bilbao, and is close to and on the S. side of Mesa de Roldan, well protected from the prevailing E. winds. There is 27 ft. of water at the loading pier. Vessels of 4,500 tons cargo can be loaded in a working day of 10 hours. There are five iron buoys for the fastening of vessels—bearing one S.E., one S.S.E., one

Spain—Agua Amarga (*continued*).

S.W., one W.N.W., and the other W. by N., and two mooring bits on shore. Steamers wishing to load at Agua Amarga have to call first at Garrucha to get free pratique. This port is within the Custom House district of Garrucha.

Pilotage.—Compulsory.

Port Charges.—**Clearance Fees** :—5 guineas.

Pro Forma Charges on a steamer of 1,736 reg. tons, ballast in, and 4,415 tons iron ore out :—

	Ptas.	c.
Brokerage, about 5 guineas	150	00
Pilotage in and out	40	00
Boat hire	35	00
¹ Transport tax, 50 c. per ton cargo	2,207	50
Custom House, reporting inwards	100	00
" " clearance	35	00
" " papers and stamps	17	50
Bill of health	25	00
Disinfecting	23	00
Lifeboat institution	5	00
Gratuities	95	00
Messengers to Agua Amarga	25	00
	<hr/>	<hr/>
	2,758	00 = £109 8s. 7d.

¹ To America, 20 centimes per ton.

AGUILAS.

Aguilas, in lat. 37°24' N., long. 1°39' W., is a terminus of the Great Southern of Spain railway, and is the best and nearest available port for the whole line from Murcia westwards.

Population.—14,720.

Imports.—Coal, railway plant, machinery, sleepers, timber, and cement.

Exports.—Esparto, ore, marble, fruit, grain, etc.

Accommodation.—There is a breakwater, some 400 metres (1,311 ft.) in length, that protects the quays, which are 600 ft. long, with from 21 to 23 ft. alongside. Vessels of any tonnage moor stern on to the breakwater, receiving esparto cargoes by lighters from private moles on the opposite beach; for iron ore, fruit, etc., they are moored broadside on to the quay. There is a pier at El Hornillo, close to Aguilas, 558 ft. long, with a depth alongside of from 26 to 40 ft., for loading ore. The ore is tipped from the top of a steel superstructure into shoots from 35-ton wagons, and two holds can be loaded simultaneously.

Pilotage.—Compulsory; levied on the gross reg. tonnage per government tariff, but this is not high.

Port Charges.—**Harbour Dues** :—50 c. per ton on the quantity loaded or discharged.

Pro Forma Charges on a steamer of 700 net reg. tons, loading esparto at Aguilas for the United Kingdom :—

	Ptas.	c.
Manifests, copies, stamps	25	00
Stamped paper, register, permits, etc	50	00
Pilotage in and out (at night, double)	90	00
Harbour dues, 600 tons at 50 c.	300	00
	<hr/>	<hr/>
Carried forward	465	00

Spain—Aguilas (*continued*).

	Ptas.	c.
Brought forward	465	00
¹ Navigation duty, 600 tons at 1 pta.	600	00
Stowage, 600 tons at 1 pta. 25 c.	750	00
Consular fees, 17s. 6d.	24	50
Carabineers, gratuities, certificates, guarantees	160	00
Mooring boats, unmooring same, and petties	40	00
Agency	150	00
Cemetery contribution	5	00

2,194 50 = £87 1s. 5d.

¹ The full duty payable by the ship is 2·50 ptas. but the charter-party invariably states "any duty over 1 pta. to be paid by charterer."

Pro Forma Charges on a steamer of 1,000 net reg. tons, loading iron ore at Aguilas for the United Kingdom :—

	Ptas.	c.
Manifests, copies, stamps	25	00
Stamped paper, register, permits, etc.	50	00
Pilotage in and out (at night double), and moving	140	00
Harbour dues, 2,000 tons at 50 c.	1,000	00
Navigation duty, 2,000 tons at 50 c.	1,000	00
Consular fees, 17s. 6d.	24	50
Carabineers, gratuities, certificates, guarantee	160	00
Mooring boats, unmooring same, petties	40	00
Agency	200	00
Cemetery contribution	5	00
Stagings	75	00

2,719 50 = £107 18s. 0d.
ALFAQUES (SAN CARLOS DE LA RAPITA).

Alfaques is in lat. 40°36' N., long. 0°35' E.

Population.—5,000 to 6,000.

Export.—Salt.

Accommodation.—This is a splendid natural port. It has a single entrance facing south. The harbour measures approximately 7 miles in width, and 9 miles in length. The bottom is of clay and sand. There is a depth of water of 18 ft. in the loading places. The tides are not very perceptible. There is a mole, that of the salt works, called "La Trinidad."

Pilotage.—Vessels from 501 to 600 tons, 32 ptas.; from 601 to 800 tons, 34 ptas.; from 801 and upwards, 36 ptas. Steamers pay $\frac{1}{4}$ less than sailing vessels.

Port Charges.—Wharfage Dues:—Vessels from 501 to 1,000 tons, 15 ptas.; 1,001 tons and upwards, 20 ptas. **Boat Hire:**—For fastening cables, 10 ptas. **Towage:**—If required, the salt works provide the same at prices to be agreed upon.

ALGECIRAS.

Algeciras, in lat. 36°8' N., long. 5°29' W., is on the W. side of Gibraltar Bay.

Population.—15,000.

Imports.—Coal, timber, iron, steel, turpentine, and petroleum.

Exports.—Cork and fruits.

Accommodation.—The anchorage is in $3\frac{3}{4}$ to 6 fathoms, about half a mile from the town.

Vegetables and fish are plentiful and cheap. Beef, 5d. per lb.

Spain—Algeciras (*continued*).

Pro Forma Charges on a vessel of 100 reg. tons :—

	Ptas.	c.
Pilotage inwards	30	00
Bill of health	12	50
Manifests	5	00
Invoice of cargo	10	00
Broker	6	00
	63	50 = £2 10s. 4d.

Shifting moorings in the harbour, 10 ptas. each time.

ALICANTE.

Alicante is in lat. 38°22' N., long. 0°30' W. Distance by sea to Liverpool, 1,558 miles.

Population.—50,142.

Imports.—Coal, timber, iron goods, petroleum, cod-fish, and general merchandise.

Exports.—Wine, almonds, lead, liquorice root, saffron, etc.

Accommodation.—The depth at the entrance and inside the port is 22 ft. There are two cranes on the mole to lift 15 and 8 tons respectively. Both cranes are troublesome and slow. Cargo is generally loaded by means of lighters, but sometimes cargo in large quantities is taken alongside the quay, if there is room for the steamer to lie there. Discharge of coal and important cargoes is usually done at the quayside. Nearly all other cargoes are discharged by means of lighters. There is no bar, and good anchorage is found in the roads. An outer port is being made.

Pilotage.—

Gross tonnage—From	80 to	100	Ptas.
"	101	300	10
"	301	500	14
"	501	1,000	18
"	1,001	1,500	22
"	1,501	2,000	30
"			40

MOORING.

Gross tonnage—From	80 to	100	Ptas.
"	101	200	4
"	201	400	5
"	401	700	8
"	701	1,000	10
"	1,001	1,500	12
"	1,500 upwards		15

All foreign sailing vessels of over 200 tons will further pay for mooring :—

Those exceeding 200 tons, 2 ptas.; 300 tons, 5 ptas.; 500 tons, 10 ptas.

Port Charges.—**Transport Dues** :—See **Spain**. **Labour** :—7 ptas.

50 c. per man per day. **Water** :—1 pta. 50 c. per 1,000 litres. Interpreter, collecting freight, advancing money, attendance, etc., 1 per cent. **Ballast** :—3 ptas. 50 c. per 1,000 kilos. **Stevedore** :—Loading or discharging, 1 pta. 50 c. per ton. **Beef** :—8d. per lb. **Towage** :—As per agreement.

ALMERIA.

Almeria is in lat. 36°50' N., long. 2°31' W. Distance from Liverpool by sea, 1,390 miles.

Population.—47,326.

Spain—Almeria (*continued*).**Imports.**—Coal, coke, briquettes, machinery, etc.**Exports.**—Ore, esparto fibre, fruit, etc.

Accommodation.—This port is considered safe for vessels of all sizes. The western mole is now finished, and is 1,827 metres (5,988 ft.) in length. There are only 3 berths alongside which vessels can go. Vessels drawing more than 17 ft. must be 5 metres (16½ ft.) distant. Vessels can moor stern on at any point beyond these berths; depth of water from 28 to 42 ft. On this mole there is a 20-ton hand crane. The eastern mole is also finished, and has a quay length of 320 metres (1,049 ft.), with a depth of water alongside of 22 to 25 ft. The fruit quay, facing S., is now 350 metres (1,149 ft.) long, and there is 300 metres (983 ft.) more under construction; depth of water alongside, 19 to 24 ft. There is a private mineral tip outside the harbour, E. side, connected with the railway. There are two storage holds, each with a capacity of about 5,000 tons; they have 20 shoots each.

Almeria is one of the ports where a quarantine of observation (three days) can be performed.

Pilotage.—Compulsory. Rates according to gross tonnage.

From	Tons. 50·01 to	Tons. 100								Ptas.
	50·01	100	.	.	.	.	.	.	.	9
"	100·01	500	.	.	.	.	.	.	.	16
"	500·01	1,000	.	.	.	.	.	.	.	26
"	1,000·01	1,500	.	.	.	.	.	.	.	35
"	1,500·01	2,000	.	.	.	.	.	.	.	43
"	2,000·01	2,500	.	.	.	.	.	.	.	50

And from 2,500·01 upwards 5 pesetas for each five hundred tons or fraction thereof.

The same amount is paid for inward and outward pilotage.

MOORING PILOTAGE.

From	Tons. 50·01 to	Tons. 100								Ptas.
	50·01	100	.	.	.	.	.	.	.	5
"	100·01	500	.	.	.	.	.	.	.	10
"	500·01	1,000	.	.	.	.	.	.	.	12
"	1,000·01	2,000	.	.	.	.	.	.	.	15

And from 2,000·01 upwards 5 pesetas for each five hundred tons or fraction thereof.

Vessels entering at night pay double mooring charges.

Port Charges.—**Transport or Loading and Unloading Dues:**—See **Spain**.

Port Dues for Mole Works:—Vessels discharging or loading pay 50 per cent. on the amount of the loading or unloading duty. **Ballast:**—Sand, 2 ptas. per ton. Charge for use of crane, 12 ptas. 50 c. per hour. (Usually this exorbitant charge can be reduced to about one-third by means of a gratuity.) **Coal:**—45 to 52 ptas. per ton. **Water:**—For boilers, 2 ptas. 50 c. per ton; for drinking purposes, 10 ptas. per ton.

Pro Forma Charges on a steamer of 855 reg. tons (having already on board 1,160 tons of copper ore), receiving here 276 tons of esparto :—

	Ptas.	c.
Consul's fee, including pilotage	145	25
Loading stages	15	00
Anchor and boat for mooring (alongside quay)	75	00
Custom House papers, stamps, permits for entering and clearing, opening register, copies of manifests, etc.	45	00
Custom House dues on 276 tons esparto at 2 ptas. 50 c. per ton	690	00
Mole dues, 50 per cent. of preceding	345	00
Stowage of 276 tons esparto at 1 pta. 25 c. per ton	345	00
Attendance and clearing, £5 5s.	147	00
Provision bill, coaches, telegrams, postage, etc.	171	00

1,978 25 = £78 9s. 10d.

Spain—Almeria (*continued*).

Roquetas, in lat. $36^{\circ}45'$ N., long $2^{\circ}37'$ W., is about 8 miles W.S.W. of Almeria, and is a shipping place for salt.

Tower de San Miguel is about 12 miles S.E. of Almeria, and is a shipping place for salt and ores.

Casa Fuerte is about 9 miles E.S.E. of Almeria, and is a shipping place for ores.

ALTEA.

Altea is in lat. $38^{\circ}37'$ N., long. $0^{\circ}5'$ W.

Population.—5,500.

Accommodation.—The bay is rather more than 6 miles across, affording anchorage to any sized vessel, and sheltered from N.E. round by N. to S.W. winds. Vessels should leave on the first appearance of E. or S.E. winds. Large vessels anchor S.E. of the town of Altea, in from 10 to 13 fathoms of water on sand and mud, about a mile from the nearest shore, but vessels that usually frequent this port anchor 700 yards from the shore, and are loaded and discharged by lighters on to the open beach.

AVILES.

Aviles is in lat. $43^{\circ}35'$ N., long. $5^{\circ}55'$ W.

Population.—14,000.

Imports.—Cereals, minerals, etc.

Export.—Coal.

Accommodation.—There is a depth of 23 ft. at high water, and of 11 ft. at low water. The water area of the tidal basin is 27 acres, and the width of the entrance 262 ft. The length of quayage is 3,920 ft., with a depth alongside of 26 ft. at high water, and 19 ft. at low water. There are 2 steam cranes to lift 30 tons, capable of discharging 750 tons per day each; 2 steam cranes to lift 3 tons, capable of discharging 250 tons per day each; 2 steam cranes to lift $1\frac{1}{2}$ tons, capable of discharging 175 tons per day each. Railways run in connection with the basin.

Pilotage.—Compulsory. 150 ptas. for steamers of 2/3,000 tons.

Port Charges.—**Ballast**:—1 pta. per ton. **Discharging**:—1 pta. 25 c. per ton.

BARCELONA.

Barcelona, in lat. $41^{\circ}25'$ N., long. $2^{\circ}8'$ E., is the most important seaport on the S.E. coast of Spain. Distance by sea to Liverpool, 1,774 miles.

Population.—533,000.

Imports.—Cotton, jute, coal, iron, timber, cereals, staves, all kinds of colonial produce, marble and building stone, chemicals, fertilisers, etc.

Exports.—Wine, silk, cork, woollen and cotton goods, paper, oil cake, hides, cream of tartar, etc.

Accommodation.—The harbour is fairly safe and commodious, but exposed to S. and S.W. winds. An extension of the eastern break-water is still in course of construction, and will afford more protection, in bad weather, to ships lying in the outer harbour. Depth of water from 20 to 30 ft. Coal steamers discharge into lighters in the outer harbour. Ships can enter the port at all times, day or night, but care must be taken

Spain—Barcelona (continued).

to pass to the west of a buoy placed where the new eastern breakwater will end. At night this buoy is luminous, and there are two green lights on it.

There is 5,002 ft. of quayage in the outer harbour, and 10,122 ft. in the inner harbour. There are 17 hydraulic cranes, capable of lifting from $1\frac{1}{2}$ to 25 tons each; also 14 movable cranes to lift $1\frac{1}{2}$ tons each; a steam crane to lift 15 tons; sheers to lift 80 tons; a floating crane to lift 25 tons; 31 hand cranes to lift 4 tons.

There is a depositing dock (C. and S. type) in 3 sections, 121, 121, and 126 ft. long, 75 ft. wide at the entrance, 23 ft. on the sill, 6,000 tons lifting power, with 18 pontoons. There is a gridiron to take a vessel of 800 tons.

There are some large engineering works near the port, where all ordinary repairs to ships can be effected.

Provisions can be obtained at reasonable rates.

Bunker Coal is obtainable from floating hulks, the property of the Barcelona Floating Coal Depôt Co., who are allowed to supply duty free coal for bunkers of vessels under a foreign flag, or of Spanish vessels if cleared for a foreign port.

Customs Papers.—Great care must be taken with the papers to be presented on arrival at a Spanish port, as fines are imposed for the most trifling mistakes. It is desirable that the advice of the Spanish Consul, at the port of loading, be taken on this point when practicable.

Remittances.—Freights can be remitted through the Crédit Lyonnais, and also through the Banco Aleman Transatlantico. Some agents have head houses in London, and bankers' commission can be reduced considerably in consequence, if not avoided altogether.

Pilotage.—Rates according to the gross reg. tonnage. A steamer of 2,000 tons, 50 ptas. inwards, and the same outwards. Night pilotage, double.

Port Charges.—Tonnage Dues :—

	Ptas.	c.
<i>Steamers from Europe :—</i>		
With coal, coke, fuel, etc., pay	2	00
„ fertilisers, pig-iron, etc., pay	3	50
„ timber, stock fish, etc., pay	6	50
„ grain pay	5	50
<i>Steamers from America :—</i>		
With iron, phosphates, etc., pay	3	50
„ grain pay	6	50
„ cotton, timber, staves pay	6	50
<i>Steamers from India :—</i>		
With grain pay	6	50
„ cotton or jute pay	8	50

(All per ton of 1,000 kilos. cargo.)

Ballast.—Stone, 7 to 8 ptas. per ton; sand, 3 ptas. per ton. **Towage :—** There are several tugs—charges moderate. **Stevedore :—** Coal, 1 pta. per ton; patent fuel and general cargo, 1 pta. 50 c. per ton; grain, 5d. per ton; cotton, 2d. per bale; timber, 1s. 4d. per standard.

Pro Forma Charges on a steamer discharging 1,500 tons of coal from United Kingdom :—

	Ptas.	c.
Manifests inwards	37	50
Stamped and printed forms	23	50
Pilotage inwards and outwards	80	00
Mooring pilots and running lines say	85	00

Carried forward 226 00

Spain—Barcelona (*continued*).

	Ptas.	c.
Brought forward	226	00
Port charges on 1,522,500 kilos. at 2 ptas. per 1,000 kilos.	3,045	00
Inspection provisions, gratuity, 2.50; sealing up, 10	12	50
Custom House visit gratuity.	25	00
Manifest out	5	00
Fee on clearing, gratuity	10	00
Health office interpreter, 12.50; doctor's account, 40; bill of health, 15	67	50
Harbour master	5	00
Harbour watchman	5	00
Translation of two Bills Lading at 1 pta.	2	00
Receipt stamps for two B/Ls at 50 c.	1	00
Consular fees, British	16	25
Boat hire	5	00
Permit to commence discharge	12	50
Surveyor's gratuity	25	00
Watchmen, carabineers on board and shore	10	00
Stevedore, 1,500 tons coal at 1 pta	1,500	00
Agency	150	00

5,122 75 = £203 5s. 1d.

Pro Forma Charges on a steamer discharging 6,000 bales of cotton from U.S.A. :—

	Ptas.	c.
Manifests inwards	43	50
Stamped and printed forms	37	50
Pilotage inwards and outwards	100	00
Mooring pilots and running lines	say 115	00
Port charges on 1,300,000 kilos. at 6 ptas. 50 c. per 1,000 kilos.	8,450	00
Inspection provisions, gratuity, 2 ptas. 50 c.; sealing up, 10 ptas.	12	50
Custom House visit, gratuity	25	00
Fee on clearing, gratuity	10	00
Manifest out	5	00
Health office interpreter, 12.50; doctor's account, 40; bill of health, 20	72	50
Harbour master, reserve berth	25	00
Harbour watchman	5	00
Translation of 40 B/Ls at 1 pta.	40	00
Fumigation of ship, cabins, etc.	50	00
Receipt stamps for 40 B/Ls at 50 c.	20	00
Consular fees, British	16	25
Noting protest	124	50
Boat hire	5	00
Permit to commence discharge	12	50
Surveyors of hatches	30	00
Checking delivery of cargo	say 420	00
Watchmen, carabineers on board and shore	25	00
Stevedore, discharging 6,000 bales of cotton at 2d. = £50	1,400	00
Agency, £10 10s. at 28 ptas. = £1	294	00

11,338 25 = £449 17s. 4d.
BARQUERO.

Barquero (or Vares) is in lat. 43°44' N., long. 7°44' W.

Exports.—Sardines, etc.

Accommodation.—Barquero is at the head of the bay, and can only be approached by vessels of 11 ft. draught at high water springs. The bay affords excellent shelter, and has sufficient water for the largest vessels. It is said to be the best harbour of refuge on the north coast of Spain. The only wind to which it is exposed is from the N.E.

Foreign vessels are not allowed to discharge in this port.

For pilotage and other expenses, see **Vivero**.

Spain.**BENICARLO.**

Benicarlo is in lat. $40^{\circ}27'$ N., long. $1^{\circ}38'$ E.

Population.—About 7,000.

Exports.—Wine and locust beans.

Accommodation.—The anchorage is in $6\frac{1}{2}$ to 7 fathoms.

Pilotage.—A local pilot is kept on board, whilst a vessel is loading, in order to take her into Alfaques on the least appearance of bad weather. He is paid half a dollar per day.

Port Charges.—Tonnage dues:—See **Spain.** **Consul:**—20s. 8d., including manifest. **Stevedores:**—4s. 2d. per day, and an additional 3s. 1d. for the boat employed to sling the pipes of wine on board. **Water:**—10d. per pipe. Mutton, 1s. 4d. per kilo.

BILBAO.

(See **Portugalete and Bilbao**, p. 571.)

BURRIANA.

Burriana is in lat. $39^{\circ}54'$ N., long. $0^{\circ}6'$ W. The town is 2 miles inland. Distance from Liverpool by sea, 1,689 miles.

Population.—15,164.

Exports.—Oranges, locust beans, etc.

Accommodation.—Vessels usually anchor about 1 mile from the shore, abreast of the town, in $4\frac{1}{2}$ fathoms on a hard sandy bottom, and it is not considered safe to anchor in less water. There is no shelter except with off-shore winds, and vessels always anchor ready to slip and proceed to sea, should easterly winds begin to blow. Steamers loading have their fires banked. A light railway connects Burriana with Castellon, Onda, and other towns in the district engaged in the orange trade.

Pro Forma Charges on a steamer of 950 gross reg. tons, loading 9,000 to 10,000 cases of fruit:—

	Ptas.	c.
Board of health	15	00
Custom House clearance and documents	9	50
Boat hire	7	50
British Consul's fees	12	75
Pilotage	60	00
Gratuities	100	00
Labourage, 40 men, 2 days at 8 ptas.	640	00
" 40 men, 2 hours at 1.50 ptas.	120	00
" stevedores, 2 days at 10 ptas	20	00
" stevedores, 2 hours at 3 ptas. per hour	6	00
Insurance—accidents	19	57
Attendances	100	00

1,110 32 = £44 1s. 1d.

CADIZ.

Cadiz is in lat. $36^{\circ}31'$ N., long. $6^{\circ}18'$ W., and is one of the most important seaports in Spain. Distance by sea from Liverpool, 1,178 miles.

Population.—69,382.

Imports.—Coal, alcohol, iron in pigs and manufactured, staves, timber, hides, colonial produce, tobacco, etc.

Exports.—Wine, Spanish brandy, salt, olives, olive oil, fruits, metals, cork-wood, Spanish coal, rags, minerals, etc.

Spain—Cadiz (continued).

Accommodation.—Cadiz Bay is a most extensive sheet of water, available for the anchoring of vessels, and extends from the battery of San Felipe to the dockyard of Carraca, at San Fernando. At the entrance to the bay there is a line of illuminated buoys. There is good anchorage in the bay in from 6 to 10 fathoms. Spring tides rise $9\frac{1}{2}$ ft. Vessels enter either between the Puercas and Diamond Rocks, or the Diamond and Rota. The Spanish Government have recently approved a scheme for making a port here, in which large steamers will be able to moor and load or discharge at the quays. The new quay will be a continuation of the present Capitanía wharf. The present harbour has 7,000 ft. of quayage, with 14 ft. alongside at high tide ordinary springs, and 5 ft. at low tide ordinary springs. There is a crane to lift from 5 to 20 tons, and 2 hand cranes to lift 2 tons. The quayage at Cadiz extends about $2\frac{1}{2}$ miles, but only small vessels can go alongside, and these only in calm weather.

In connection with the Royal Dockyard there are 2 sheers to lift 25 and 100 tons respectively, a crane to lift 20 tons, and a floating derrick to lift 60 tons. At the works of La Constructora Naval Española, there are sheers to lift 100 tons. Extensive repairs can be carried out.

In Cadiz Bay there are several places where vessels can discharge alongside piers. Vessels can always discharge and load in the bay from lighters, for which no wharfage has to be paid. At Capitanía Mole and Puerta Sevilla quay vessels drawing up to 12 ft. can get alongside, but at Puerta Sevilla they remain dry at low tide, and with about 6 ft. of water at the Capitanía Mole; soft bottom at both places. No wharfage is incurred by discharging at these places. At the Capitanía Mole there is a portable crane to lift 20 tons.

Puntales pier is an iron pier, 1,308 ft. long and 65 ft. wide, built on piles, and connected with the general line of the Andalusian Railways. This pier belongs to the Cadiz Harbour Works Committee, by whom it is leased. Vessels drawing $19\frac{1}{2}$ ft. of water can go alongside at any state of the tide, but masters are cautioned to be very careful on going alongside or leaving this pier, as, having been built across, the ebb and flow of the tide makes the getting alongside or leaving it at certain states of the tide difficult. This pier has 5 steam movable cranes to lift from 5 to 8 tons, and a fixed crane, placed at the end of the pier, capable of discharging 30 tons an hour. Vessels using this pier, owing to its construction, can seldom use their own winches, but the movable cranes are hired at the rate of 60 cents per 1,000 kilos.

WHARFAGE—PUNTALES PIER.

Sailing Vessels.

	Each vessel per day. Ptas. c.
Under 50 tons	2 50
From 51 to 100 tons	5 00
„ 101 to 300 „	12 50
„ 301 to 500 „	17 50
Over 500 tons	25 00

Steamers.

	Each vessel. per day. Ptas. c.
Under 50 tons	6 00
From 51 to 100 tons	8 00
„ 101 to 300 „	17 50
„ 301 to 500 „	22 50
Over 500 tons	35 00

CONDITIONS.

1. Payment to be made for the day of going alongside the pier, and all others that the vessel may remain moored to the pier for any reason whatever, holy days and feast days inclusive.

2. Once leave is given to go alongside, time for payment will begin to count, unless the berths are occupied, in which case vessels will only be liable from the time the berth is ready.

3. With a proper order from the authorities, leave will be granted for other vessels to moor outside those moored, without any payment for the bay traffic vessels, and 50 per cent. of the tariff for outside traffic vessels. Should the tonnage declared at the time of soliciting the permit not be correct, making the vessel pay by a lower tariff, double rates to those charged for its proper class will be exacted.

Trocadero Pier.—This is a wooden pier, 654 ft. long and 30 ft. wide, belonging to the Andalusian Railway Company. Vessels drawing 17 ft. can get alongside, but at low tide have to lie on soft mud. The berthing at this pier is by regular turn, but masters have to sign an engagement, before they get leave to moor, that they will haul off should vessels consigned to the Railway Company, or other steamers that have preference claim, arrive, and have to land and/or load cargo. Wharfage on this pier is 1 peseta (10*d.*) per ton for all cargo landed or loaded. There is a steam crane for which 30 pesetas (£1 4*s.*) per day, or 15 pesetas per half day is levied. For light draught vessels there are one or two berths in a creek alongside the railway and coal depôt.

The Compañía Transatlantica have 3 wharves, 427 ft. long, 20 ft. wide and a mean depth at low water of 22½ ft. at springs, and 18 ft. at neaps, at their graving dock establishment of Matagorda, which are also connected with the Andalusian Railways. On one of these wharves there are steam sheers to lift up to 60 tons, for which the following are the conditions and rates :—

TARIFF FOR THE 60-TON SHEERS.

For loading or discharging each piece of the undermentioned weights :—

		Ptas.	c.
Up to 4 tons	.	100	00
From 4 to 6	.	150	00
" 6 " 8	.	200	00
" 8 " 10	.	250	00
" 10 " 15	.	375	00
" 15 " 20	.	500	00
" 20 " 25	.	625	00
" 25 " 30	.	750	00
" 30 " 40	.	1,250	00
" 40 " 50	.	1,750	00
" 50 " 60	.	2,500	00

The Compañía Transatlantica are not answerable for damages or accidents that may happen during the work. The Compañía reserve to themselves the right of exacting payment of the wharfage on the tonnage of vessels mooring to use the sheers. It also prohibits leaving heavy piece on the wharves, the owners having to remove them at once. The transfer of these pieces over the rails in the dockyard, or to the railway, will be paid as may be agreed, but the Compañía may refuse to allow them to be passed over their piers, bridges, etc., or exact special securities. The crew of

Spain—Cadiz (continued).

The vessel that receives or discharges the pieces for which the crane is used will help the work on board their vessel.

The Compañía have a graving dock at their establishment which is 339 ft. long, 64 ft. wide at the entrance, and 25 ft. on the sill. Here also is a patent slip, the property of the same company. The Government have 3 dry docks and a patent slip of 600 tons lifting power. The docks are :—

- No. 1. 259 ft. long, 56 ft. wide at the entrance, $23\frac{1}{2}$ on the sill.
- No. 2. 393 ft. long, 68 ft. wide at the entrance, $24\frac{1}{2}$ on the sill.
- No. 3. 219 ft. long, 50 ft. wide at the entrance, $16\frac{1}{2}$ on the sill.
- No. 2 is only $55\frac{1}{4}$ ft. wide at 8 ft. below the H.W. level at the entrance.

Quarantine observation can be performed in the bay. During the observation vessels may be visited by the consignees, duly authorized by the Health Board. Provisions and stores can be taken off to them.

Vessels coming to Spanish ports should be very careful not to admit tobacco as cargo on transit, as they are obliged to leave a deposit equal to the full duty, till such time as a certificate is received from the Spanish Consul at the port of discharge that this cargo has been there delivered.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the San Fernando Observatory 10 minutes before the signal, and dropped at 1 h. 00 m. 00 s. Cadiz (San Fernando) mean time, equal to 1 h. 24 m. 49.6 s. Greenwich mean time.

Pilotage.—Compulsory. Rates according to the following tariff :—

	Sailing Vessels.		Steamers.
	Under 200 tons.	Over 200 tons.	
	Ptas. c.	Ptas. c.	Ptas. c.
From sea to bay	40 00	55 00	50 00
„ bay to sea	36 50	51 25	46 25
„ sea to Puntales, direct	57 50	80 00	72 50
„ Puntales to sea, direct	53 75	76 25	68 75
„ sea to Puntales, anchoring in bay	70 00	100 00	90 00
„ Puntales to sea	66 25	96 25	86 25
„ sea to Carraca, direct	87 50	125 00	112 50
„ Carraca to sea, direct	83 75	121 25	108 75
„ sea to Trocadero, direct	90 00	127 50	115 00
„ Trocadero to sea, direct	86 25	123 75	111 25
„ Puntales to Carraca, or vice versa	30 00	45 00	40 00
„ Puntales to Trocadero	32 50	47 50	42 50
„ Puntales to bay	30 00	45 00	40 00
Moving from one anchorage to another	16 50	25 00	22 50

1. Ships of war and yachts pay full pilotage inward and outward, as above.

2. Night pilotages are entitled to double rate. An allowance is only made to merchant ships of 5 pesetas, deducted from the boat service in such case.

Port Charges.—Transport Dues :—See Spain. **Harbour Dues :—**Half as much as is levied on the various goods under the provisions of the transport tax, for which see Spain.

Discharging Ballast.—1 pta. 50 c. per ton. **Stowing Wines :—**1 pta. 50 c. per ton of 2 butts, or equivalent. **Water :—**2 ptas. 50 c. (2s.) per 100 gallons. **Labour :—**For discharging coal, if cranes are not used, 1 pta. 25 c. per ton. Vessels loading salt pay 10 c. per 1,000 kilos. for transport tax, and 5 c. per 1,000 kilos. for harbour dues.

Pro Forma Charges on a steamer, discharging 1,000 tons of coal at Puntales wharf :—

Spain—Cadiz (*continued*).

	Ptas.	c.
Pilotage inwards to Puntales, anchoring in the bay	90	00
Customs broker inwards	66	00
¹ Transport dues	500	00
¹ Harbour dues	250	00
British Consul's fees	10	15
Subscription to cemetery	2	50
² Cranage, 60 c. per 1,000 kilos.	609	00
Wharfiage, 5 days at 40 ptas.	200	00
Labour discharging, 1 pta. per ton	1,000	00
Customs broker outwards	50	75
Gratuities	75	00
Pilotage outwards	68	75
Attendance	125	00

3,047 15 = £120 18s. 1d.

¹ Unless specially mentioned in the charter these items are to be paid by the ship.

² Unless specially mentioned in the charter this item is paid by the receiver.

Pro Forma Charges on a steamer discharging 3,500 tons coal at the Compañía Transatlántica Matagorda Wharf or at the Pontoon anchored in the Bay.

	Ptas.	c.
Pilotage inwards to Matagorda	72	50
Customs expenses	37	15
Harbour work dues	875	00
British Consul's fees	14	00
Labour discharging (1 pta. per 1000 kilos.)	3,500	00
Pilotage outwards	68	75

4,567 40 = £181 4s. 1d.

Vessels discharging at Trocadero Creek save wharfiage and cranage but incur 20 ptas. 6 c. extra pilotage.

CARBONERAS.

Carboneras is in lat. 36°58' N., long. 1°55' W.

Accommodation.—It is an open bay, exposed to easterly winds, but sheltered from S. by W. round to N.E. by E. $\frac{1}{2}$ E. The best anchorage is obtained by bringing the centre of the island to bear N.E. by E. in 10 fathoms of water. Gales are of rare occurrence, and the land breeze sets in every night at sunset, and sometimes continues until 11 a.m. Vessels bound for this port must first call at Garrucha, and pay the Customs charges, etc. Provisions are scarce, and no fresh water can be obtained, so that shipmasters should take in a supply at Garrucha.

CARRIL.

Carril, in lat. 42°38' N., long. 8°46' W., is in Arosa Bay. This port is no longer of any interest to shippers.

CARTAGENA.

Cartagena is in lat. 37°37' N., long. 0°59' W. Distance by sea from Liverpool, 1,490 miles.

Population.—99,871.

Imports.—Coke, coal, timber, cod-fish, etc.

Exports.—Chiefly lead, iron ores, zinc ores, and esparto.

Accommodation.—Cartagena harbour is enclosed by land on

Spain—Cartagena (*continued*).

all sides except S., which is protected by two breakwaters, one running from E. to W., 2,500 ft. long, and one running from N.W. to S.E., 492 ft. long. Looking towards the S.W., the breakwaters overlap. The western breakwater is the outer one, and the entrance to the port points in a S.E. direction. The entrance is protected by the land on the outside of the harbour, and by the island of Escombreras. Navigation into the port is easy. The width of the entrance is 1,145 ft., and the depth $32\frac{1}{2}$ ft. The water area of the harbour is 316 acres.

Muelle de Alfonso XII is 2,578 ft. long, with 27 ft. alongside the quays. The length of other available quayage is 1,020 ft. with the same depth alongside. There is a floating crane to lift 30 tons, 1 stationary crane to lift 20 tons, 1 stationary crane to lift 10 tons, 2 movable cranes to lift 6 tons each, and 1 to lift up to 4 tons, 2 weighbridges to weigh up to 20 tons each; and 2 portable weighbridges to weigh up to 2 tons each. Railway and steam tramway lines run along the Alfonso XII quay. Dredging is being carried on to obtain a minimum depth of 27 ft. throughout the port. This has progressed so far as to enable vessels drawing 21 to 22 ft. to load and discharge alongside the Muelle de Pedieño, in addition to the facilities afforded by the Muelle de Alfonso XII, which is being extended by 262 ft. at the west end.

Repairs can be executed at the Government dockyard, or at one of the four private shipbuilding firms. The Government have a dry dock, 492 ft. long, $91\frac{1}{2}$ ft. wide at the entrance, and $31\frac{3}{4}$ ft. on the sill. There is a floating dock, 320 ft. long, 79 ft. wide at the entrance, and $29\frac{1}{2}$ ft. on the sill. There is a patent slip to lift 130 tons.

Quarantine is performed inside the harbour, if not more than 3 days' observation be imposed. If more, the ship has to proceed to Port Mahon.

Provisions.—All kinds supplied, except salt beef and pork.

Water.—Good, but rather dear.

Coal.—Cardiff or Newcastle in any quantities.

Pilotage.—Pilots are stationed at the outer breakwater, and meet ships coming in day or night. Pilotage inwards and outwards, and for movements inside the harbour, including mooring and unmooring, is compulsory.

RATES OF PILOTAGE.

Inwards or Outwards—

100 to 300 tons.	301 to 600.	601 to 2,000.	2,001 to 3,000.	3,001 to 4,000.	4,001 to 5,000.
10 ptas.	15 ptas.	20 ptas.	30 ptas.	35 ptas.	40 ptas.

For each operation inside the harbour, one-half the above rates.

Night pilotage double. Pilotage is reckoned on the gross tonnage.

Port Charges.—Transport Dues:—See **Spain. Harbour Dues:**—50 per cent. of discharging dues. No local harbour dues are collected from vessels loading. **Quarantine Dues:**—12 c. per reg. ton per day. **Stowage:**—Lead, $57\frac{1}{2}$ c. per ton; ochre in barrels, 75 c. per ton; esparto, 1.25 ptas. per ton. **Loading:**—Ore (exclusive of trimming), $57\frac{1}{2}$ c. per ton. (Invariably stipulated for in charter party.) **Discharging:**—Coke, 1.3125 ptas. per ton; coal, 1.0625 ptas. per ton; timber, ordinary dimensions, 2 ptas. per standard. **Customs Dues:**—See **Spain.**

Pro Forma Charges on a steamer loading 6,750 tons of mineral :

Spain—Cartagena (*continued*).

	Ptas.	c.
Opening register	5	00
Soliciting Custom House visit	5	00
Manifests, copies	25	00
Gratuities	45	00
Consul	25	38
Custom and port dues, transport dues, pilotage, etc.	3,843	52
Telegrams	4	40
Provisions account	694	20
Hire of boat and water	120	00
Stages	70	00
Watchman	20	00
Stamps and petties	17	50
Shipping federation	2	50
Agency fee (£17 2s. 6d. at 28 ptas. =£1)	479	50
Health office visit	15	00
Trimming	200	00
	5,572	00 = £221 1s. 7d.

Pro Forma Charges on a steamer discharging 1,669 tons of coal :—

	Ptas.	c.
Opening register	5	00
Soliciting Custom House visit	5	00
Manifests	25	00
Gratuities	45	00
Consul	21	75
Customs and port dues, transport dues, pilotage, etc.	1,690	97
Discharging 1,669 tons of coal at 1·375 per ton	2,294	88
Telegrams	8	35
Hire of boat and water	103	00
Boatage (papers)	5	00
Shipping federation	2	50
Watchman	20	00
Agency £5 10s. at 28 ptas. =£1	154	00
Health visit	10	00
4 days dispatch at £5 =£20 at 28 ptas. =£1	560	00
	4,950	45 = £196 8s. 5d.

CASTELLON DE LA PLANA.

Castellon de la Plana in lat. 39°59' N., long. 0°1' W., is 3 miles inland from the shore.

Population.—29,966.

Imports.—Coal and chemical manures.

Exports.—Oranges and locust beans.

Accommodation.—Port works are in course of construction, and the eastern breakwater is now (1908) 826 metres (2,708 ft.) long, the western one being also extended. Castellon is exposed to on-shore winds, and vessels should be prepared to leave at short notice. A narrow-gauge railway runs from the beach, through the town, 20 miles inland for conveying cargo.

Port Charges.—Harbour Works Dues:—50 cts. per reg. ton. Other charges are the same as at Burriana.

CASTRO URDIALES.

Castro Urdiales is in lat. 43°26' N., long. 3°19' W.

Population.—13,000.

Export.—Iron ore.

Spain—Castro Urdiales(continued).

Accommodation.— There is only a small harbour, for vessels up to about 500 tons, drawing not more than 14 ft. The depth at high water ordinary springs is from 13 to 15 ft. The water area of the harbour is about $3\frac{1}{2}$ acres and the breadth of the entrance 36 ft. An artificial harbour 2,620 ft. by 1,970 ft. is being constructed. Steamers load cargoes at different piers or cantilevers in the open bay, and vessels up to 4,000 tons can load at the rate of over 250 tons per hour.

There is railway connection with Bilbao and Santander.

On the coast near Castro Urdiales there are several iron ore mines in connection with which there are loading spouts. Vessels can only load at these spouts in good weather. They are as follows :—

Castro Alen	outside the tidal harbour	12 ft. alongside at low O.S.T
Urdiales No. 1.	$1\frac{1}{4}$ miles W. of Castro Urdiales	14 " " "
Urdiales No. 2.	$1\frac{1}{4}$ " "	11 " " "
Sanovia	$2\frac{1}{2}$ " "	11 " " "
Dicido	1 mile E. of Castro Urdiales	17 " " "
Saltacaballo	$1\frac{1}{4}$ " "	24 " " "
Onton	2 " "	27 " " "

Port Charges.—All vessels pay 1s. per ton on freight, which covers all port charges. Consular fees.—12s. 6d.

CEDEIRA.

Cedeira, is in lat. $43^{\circ}40'$ N., long. $8^{\circ}5'$ W.

Population.—900.

Accommodation.—This port is only suitable for vessels of 12 ft. draught. The town is about half a mile from the anchoring ground, and can only be approached at high water. Springs rise 11 ft.; neaps, 9 ft. Fresh water can be obtained, but provisions are scarce.

CORCUBION.

Coreubion is in lat. $42^{\circ}58'$ N., long. $9^{\circ}11'$ W.

Population.—2,000.

Import.—Coal.

Exports.—Wood and fish.

Accommodation.—This port is used by steamers as a coaling station owing to its situation near Cape Finisterre. It can be entered by vessels of any size at any tide. The coal is supplied from hulks, alongside which steamers bunker. Workmen are kept ready to begin as soon as a steamer arrives, and can work all night, if necessary.

Pilotage.—Not compulsory. If taken, according to tariff. A steamer of 2,000 tons reg. pays 50 ptas., in and out.

Port Charges.—**Boat Hire** :—About 5s. per day. **Harbour Dues** :—50 c. per ton of cargo (coal).

Spain.**CORUNNA.**

Corunna is in lat. 43°21' N., long. 8°26' W.

Population.—43,971.

Imports.—Coal, iron, steel rails, fresh fish, salted cod, maize, cocoa sugar, tobacco, raw petroleum, timber, hides, alcohol, spirits, rice, salt, and general merchandise.

Exports.—Iron ore, oxen, potatoes, onions, salted fish, eggs, pit-props, chocolate, salted meat, nuts, etc.

Accommodation.—This harbour is safe, well sheltered and capable of receiving the largest vessels. On account of its situation close to the track of vessels trading between the north of Europe and America, the Mediterranean, and beyond, and also on account of the easy entrance both by day and by night, it has become one of the chief ports on the north coast of Spain. Corunna is also the principal port of Spain for the passenger trade to Cuba and South America. Extensive harbour works, valued at over 8 million pesetas, are now nearing completion. There are three quays and a breakwater perfectly sheltered with some 4,500 ft. of quayage, having a depth of water of from 30 to 40 ft. at high water, and from 17 to 27 ft. at low water; soft bottom. In addition, there are some 4,000 ft. of quayage with 15 ft. of water at high water; soft bottom. There is excellent anchorage ground within the fortress of San Anton of from 4 to 6 fathoms of water soft bottom. There are facilities for coaling, taking water and repairing steamers. There is ample space for the storage of goods on the quay, which also has a railway siding. Steamers that do not come alongside the quay can discharge into lighters that come alongside a public iron pier, 650 ft. long. Steam cranes discharge the goods from the lighters, and place them on wagons that carry them to the Customs warehouse. There is one fixed hand crane to lift 20 tons; 6 small hand cranes, and 3 steam locomotive cranes to lift 4 tons, and 2 to lift 3 tons. Electric light is fitted on the quays and railway siding. Fresh stores are cheap and plentiful. Ships can perform quarantine here.

Pilotage.—**PILOTAGE CHARGES, IN OR OUT.**

Tons.	Pesetas.	Tons.	Pesetas.	Tons.	Pesetas.
80 to 250	20	1,501 to 1,750	52-50	3,001 to 3,250	67-50
251 „ 500	30	1,751 „ 2,000	55	3,251 „ 3,500	70
501 „ 750	35	2,001 „ 2,250	57-50	3,501 „ 3,750	72-50
751 „ 1,000	40	2,251 „ 2,500	60	3,751 „ 4,000	75
1,001 „ 1,250	45	2,501 „ 2,750	62-50	4,001 upwards	80
1,251 „ 1,500	50	2,751 „ 3,000	65		

Pilotage is compulsory. Steamers entering or sailing at night pay in addition, half the above rates.

MOVEMENTS IN PORT, MOORING ALONGSIDE QUAY, OR UNMOORING.

Tons . . .	80 to 250	251 to 500	501 to 750	751 to 1,000	1,001 upwards.
Pesetas . .	5	10	15	20	25

Steamers moving, mooring or unmooring at night, pay twice the above rates. Vessels are not allowed to shift berths without previous permission, and they must take a pilot.

Spain—Corunna (*continued*).**Port Charges.—Transport Dues :—**See **Spain**.

Loading or Discharging Goods.—Alongside the quay, 40 c. to 2 ptas. per ton, including the use of the cranes. Packages weighing more than two tons, according to special tariff. Goods left on the quay are not charged rent for the first three days, but after that have to pay from 2 to 10 c. per square metre per day; they must be removed after seven days. Tax on steorage passengers embarking here, 1 pta. per passenger; disembarking, 1 pta. per passenger. **Labour :—**7 ptas. 50 c. per man per day. Workmen employed on board have to be certificated seamen.

Pro Forma Charges on a steamer from Cardiff, with 1,000 tons of coal :—

	Ptas.
Pilotage, in and out, and movements	150
Boat mooring and unmooring	25
Transport tax, at 0.50 pesetas per ton	500
Committee of Works, 50 per cent. on above	250
Boat hire	20
Consular fees	25
Labour, discharging at 1 peseta per ton	1,000
Sundries, including gratuities	100
Agency	100
	<hr/>
	2170 = £86 2s. 0d.

CULLERA.

Cullera is situated in lat. 39°11' N., long. 0°18' W., at the mouth of the river Jucar, on its left bank.

Population.—11,957.

Imports.—Sulphate of ammonia, superphosphate of lime, flour, timber, etc.

Exports.—Rice, oranges, tomatoes, and other fruits.

Accommodation.—The anchorage ground for vessels in the Cullera Roads lies between the mouth of the river Jucar, and the Moro Reef (marked by an iron column, 4 metres—13 ft.—high), half a mile from the beach, in 3½ fathoms on a sandy bottom. The landing stage, or mole, for goods, is in the river Jucar, about a mile from the mouth or bar. Loading and discharging is done by means of lighters, carrying 20 tons each.

The expenses on vessels at this port amount to about 150 ptas., besides loading and unloading, which is paid by the day at the rate of 5 ptas. (or about 60 c. per ton).

DENIA.

Denia is in lat. 38°51' N., long. 0°7' E.

Population.—12,431.

Imports.—Wheat, flour, lumber, deals, guano, coal, and sulphur.

Exports.—Raisins, grapes, onions, oranges, almonds, tomatoes, pomegranates, melons, etc.

Spain—Denia (*continued*).

Accommodation.—The harbour works, of an exclusively municipal character, begun in 1897, are still confined under a very scanty working personnel to the building of the northern breakwater, of which nearly three-fourths is constructed, and to the southern breakwater, one-third of which is built. Steamers anchor in the open roadstead off the town, about $1\frac{1}{2}$ miles from the beach in front of the Castle Hill, in 7 to 10 fathoms, and are considered safe except at occasional intervals during the winter, when strong winds prevail from the N. and N.E. Loading and discharging is done by lighters. Vessels not drawing over 16 ft. can anchor inside the natural port and harbour now under construction. There is no steam-tug at present, but towage can be effected by means of a lighter at cheap rates. There is 1,000 ft. of quayage.

Pilotage.—Vessels up to 80 tons not compulsory—if required, 9 ptas. 50 c.; vessels from 81 to 100 tons, 14 ptas.; from 101 to 150 tons, 22 ptas.; from 151 to 200 tons, 23 ptas.; from 201 to 250 tons, 23-50 ptas.; from 251 to 300 tons, 24-50 ptas.; from 301 to 350 tons, 25-50 ptas.; from 351 to 400 tons, 26-50 ptas.; from 401 to 450 tons, 27-50 ptas.; from 451 to 500 tons, 28-50 ptas.; from 501 to 600 tons, 30-50 ptas.; from 601 to 700 tons, 32-50 ptas.; from 701 to 800 tons, 34 ptas.; from 801 to 900 tons, 36 ptas.; from 901 to 1,000 tons, 38 ptas.; from 1,001 to 1,500 tons, 43 ptas.; from 1,501 to 2,000, 47-50 ptas.; from 2,001 to 2,500 tons, 53-20 ptas.; from 2,501 to 3,000 tons, 59 ptas.; from 3,001 to 3,500 tons, 64-50 ptas.; from 3,501 to 4,000 tons, 70 ptas.; and 5 ptas. extra for every additional 500 tons or fraction thereof.

Mooring and Unmooring.—Vessels up to 50 tons, not compulsory—if required, 5 ptas.; vessels from 51 to 80 tons, 5 ptas.; from 81 to 100 tons, 6 ptas.; from 101 to 150 tons, 6-50 ptas.; from 151 to 200 tons, 7 ptas.; from 201 to 250 tons, 7-50 ptas.; from 251 to 300 tons, 8 ptas.; from 301 to 350 tons, 8-50 ptas.; from 351 to 400 tons, 9 ptas.; from 401 to 450 tons, 9-50 ptas.; from 451 to 500 tons, 10 ptas.; from 501 to 600 tons, 11 ptas.; from 601 to 700 tons, 12 ptas.; from 701 to 800 tons, 13 ptas.; from 801 to 900 tons, 14 ptas.; from 901 to 1,000 tons, 15 ptas.; from 1,001 to 1,500 tons, 17-50 ptas.; from 1,501 to 2,000 tons, 20 ptas.; from 2,001 to 2,500 tons, 23 ptas.; from 2,501 to 3,000 tons, 26 ptas.; from 3,001 to 3,500 tons, 29 ptas.; from 3,501 to 4,000 tons, 32 ptas.; and 2 ptas. 50 c. extra for every additional 500 tons or fraction thereof.

Foreign vessels pay 5 ptas. extra over and above both the foregoing tariffs. Sailing vessels, both Spanish and foreign, over 80 tons, 50 per cent. on the tariff rates for mooring. The rates include the boat and man bringing the pilot on board, but if the same is employed for mooring, 5 ptas. is paid by the vessel for every 3 hours or fraction thereof, and 5 ptas. per day for each of the crew, and if at night 20 ptas. for the boat with two men for every 3 hours or part thereof. Double rates for night movements.

Port Charges.—Anchorage Fees:—Vessels anchoring in the roadstead, 30 ptas. (If they subsequently enter the port this charge is cancelled.) **Towage:**—Towing vessel inside the port, about 35 ptas. **Custom House Dues:**—See **Spain.** **Harbour Improvement Dues:**—1 pta. per ton of goods loaded or discharged. **Harbour Dues:**—15 c. per reg. ton. **Shipbroker:**—50 ptas. on Spanish vessels, and 75 ptas. on a foreign ship. Brokerage on procuring charter, 5 per cent. Agents charge from

Spain—Denia (continued).

3 to 5 per cent. on the total amount of freight. **Stevedores** :—Loading or discharging, 7 ptas. 50 c. per day each man ; at night time, 1 pta. 50 c. extra for every working hour. Stevedore's head man, 11 ptas. 25 c. ; at night time, 2 ptas. 25 c. for every working hour. Double wages for Sunday labour. Stevedore's boat, 7 ptas. 50 c. Booms hire, 5 ptas. each set. **Ballast** :—Stone or clay, 2 ptas. per ton delivered alongside the ship in the port ; cost of discharging, 2 ptas. ; cost of loading, 2 ptas. **Provisions** :—Abundant at irregular prices. **Fresh Water** :—3 ptas. 50 c. in the port, and 5 ptas. outside in the roadstead, for one cask containing about 120 gallons.

Pro Forma Charges on a sailing vessel of 350 tons reg., coming from Sweden with a cargo of deals, and bound for a foreign port with ballast :—

	Ptas.	c.
Anchorage	30	00
Pilotage in and out, and ballast guard	72	25
Stern mooring anchors	30	00
Ballast, 50 tons at 2 ptas., and loading, 2 ptas.	200	00
Manifest inward	25	00
Harbour dues	52	50
Board of health, Custom House dues, gratuities, etc.	615	00
Telegrams and postages	23	00
Consular fees and Portuguese bill of health, etc.	116	10
Agency and clearing fees	150	00
	1,313	85 = £52 2s. 8d.

Pro Forma Charges on a steamer of 1,000 tons reg., loading in one day 300 tons of raisins in the roadstead, for London :—

	Pts.	c.
Anchorage	30	00
Manifest inward	25	00
Harbour dues	150	00
Stevedore's account	700	00
Board of health, Custom House dues, gratuities, stamps, etc.	650	00
Boat hire	10	00
Consular fees	17	50
Clearing fees	75	00
	1,657	50 = £65 15s. 3d.

ESTEPONA.

Estepona, in lat. 36°25' N., long. 5°5' W., is 24 miles N.E. of Gibraltar.

Population.—About 10,000.

Imports.—Wheat and other grain, coal, machinery, cement, and manure.

Exports.—Raisins, figs, sweet potatoes, oranges, sardines, lemons, wine, cork, and sugar.

Accommodation.—There is a good roadstead, with 4 fathoms of water opposite the town. It is sheltered from N.W. winds.

FERROL.

Ferrol is in lat. 43°30' N., long. 8°14' W.

Spain—Ferrol (*continued*).**Population.**—25,281.**Exports.**—Corn, wine, fish, and pit-props.

Accommodation.—Ferrol is the chief naval station of Spain, and is a very fine harbour. It is admirably situated as a haven of refuge for vessels in distress. There is a depth of 15 ft. at low water spring tides, and of 8 ft. at neap tides. Goods are discharged by means of lighters, there being no quays here. There are two floating coal depôts, alongside which vessels of large tonnage can go. There is a steam-tug here. Other facilities are afforded at San Julian, where there is a dry dock in the Royal Government Dockyard, and a patent slip to raise 1,000 tons. The dry dock is 437½ ft. long over all, 84 ft. wide at the entrance at the high water ordinary spring level, and 34 ft. on the sill at high water ordinary springs. If vessels have to discharge for repairs, there are ample stores where cargo can be deposited. Steamers after discharging coal proceed to Bilbao in ballast; sailing vessels take cargoes of pit-props or pit-wood. Coal can be obtained. There are 3 cranes to lift 1 to 2 tons each on the public quays. The Muelle de Perez has 650 ft. of quayside, with a depth of 6 to 15 ft. of water alongside at high tide. The bottom is dry at low tide, but soft and even.

Pilotage.—Compulsory for foreign vessels and Spanish vessels coming from foreign ports.

Pilotage Tariff.—Entering and leaving, for sailing vessels or steamers :—

FROM MUELA TO THE ANCHORAGE.

From	70 to	200 tons	Ptas.
			25
„	201 to	500 „	38
„	501 to	1,000 „	40
„	1,001 to	2,000 „	50
„	2,001 to	3,000 „	60
„	3,001 and	above	75

Movements in port, 400 tons, 10 ptas.; 600 tons, 15 ptas.; 601 tons and upwards, 20 ptas., with or without assistance of pilot.

The pilot of the port never goes farther out than Cape Priorino.

If a vessel takes a fisherman outside to pilot her to the entrance, the fees are paid according to the distance, from 10 to 30 pesetas over and above the port pilotage, which is compulsory. There are private tugboats, and the dockyard tug is available if asked for, and not otherwise engaged; charges about 150 ptas. to tow a ship out.

Pilotage for vessels merely coaling at the floating coaling stations :—

	Ptas.
Up to 1,000 tons	30
From 1,001 to 2,000	40
„ 2,001 to 5,000	50
„ 5,001 upwards	75

Port Charges.—**Labourers** :—Working on board, 4 ptas. per day. **Commission** :—Collecting freight, 2 per cent. **Stevedore** :—Discharging, 1 pta. 25 c. per ton, from hull to lighter. **Ballast** :—1 pta. 50 c. per ton. **Boat Hire** :—5 ptas. per day.

Vessels putting in through bad weather or in distress only pay pilotage and petty expenses. If a vessel has to perform quarantine, according to existing laws, she must proceed to a lazaretto or to one of the ports appointed for that purpose; but if she performs three or five days' observation, she pays sanitary guards, fumigations, etc.

Spain—Ferrol (*continued*).

Pro Forma Charges on a Uruguayan steamship, from Cardiff to Ferrol, with a cargo of 837 tons of Welsh coal :—

	Ptas.	c.
Pilotage in and out	80	00
Manifests, stamps, etc.	20	00
Custom House dues on 852·600 kilos. at 50 c.	426	30
Boat hire	5	00
Gratuities, etc.	45	00
Postage, telegrams, and semaphore	4	25
Uruguayan Consular fees	28	00
Bill of health	12	00
Agency and clearance	75	00
	<hr/> 695 55=£27 11s. 11d. <hr/>	

Vessels proceeding to another Spanish port to load pay no further dues, only pilotage.

GARRUCHA.

Garrucha is in lat. 37°14' N., long. 1°49' W.

Population.—About 5,000.

Imports.—Coke, coal, timber, machinery, etc.

Exports.—Silver, lead, iron ore, oranges, lemons, and esparto.

Accommodation.—The anchorage is close to the shore in 8 to 12 fathoms. Vessels anchoring here are much exposed to the easterly gales during the winter season, and should get under weigh immediately if one comes on.

Garrucha is a Vice-Consular district, and the other places where vessels are allowed to load and unload are—Terreros, Villaricos, Palomares, Ferreylla, Carbonera, and Agua Amarga. All these places are licensed for the exportation of the produce of the peninsula; Terreros, Villaricos, and Palomares, for the importation of coke, coal, and machinery only. Garrucha is licensed for the importation of all goods, except alcohol, salt fish, cereals, flour, live stock, colonial produce, petroleum, and textile fabrics.

Vessels bound to Garrucha are admitted to pratique on arrival; those bound to other places must first call for pratique here before going to their destination; when clearing outwards they must again call at Garrucha, except at the port of Carbonera, where there is a health office. There is no port or safe harbour within the district.

Pilotage.—10 to 15 ptas. inwards, and the same outwards.

GIJON.

Gijon is in lat. 43°34' N., long. 5°42' W.

Population.—47,544.

Imports.—Hardware, pig-iron, etc.

Exports.—Apples, nuts, coal, butter, and ores.

Accommodation.—Gijon is a tidal harbour, and is dry at low water. A breakwater has been constructed, behind which vessels can safely ride during rough weather, the depth of water being 18½ ft. at high water spring tides, and 12 ft. at low water neap tides. Vessels drawing 11 ft. of water can lie alongside the quay of the inner port at high spring tides; the bottom is hard sand, and care should be taken that no bumping occurs. The

Spain—Gijon (*continued*).

water area of the outer harbour is 34 acres, with a depth of 22 ft. on the bar at high water ordinary springs. The quayage is 5,232 ft. long with 19 ft. alongside at high water ordinary springs and 8 ft. at low. Fomento quay is 4,056 ft. long with 16½ ft. alongside at high, and 7½ at low ordinary spring tides. The Government Darsena (Dock) is 2,366 ft. long with 12 ft. alongside at high water and nil at low. Cranes from 3 to 80 tons are situated in the outer harbour, on Fomento quay and in Darsena; 3 staithes for shipment of coal, from 30 to 50 tons per hour each, are situated in the inner harbour.

Coal freights can often be obtained here, and many English vessels avail themselves of the law to enter Gijon in ballast without charges, and load coal for the southern ports in Spain, where they can obtain return cargoes without incurring further charges. Many vessels leave in ballast from the northern ports of Spain, bound to the wine, fruit, and mineral shipping ports of the south, whereas by coming to Gijon they could load coal quickly and at good freights.

The permission of the harbour-master has to be obtained before discharging ballast, and he will also point out the place.

Steamers and vessels drawing 10 ft. and upwards, when chartering for Gijon, ought to stipulate in bills of lading and charters:—"To Gijon, or as near thereto as she may safely get on arrival. Lighterage if required and private jetty dues, and 'derechos de descarga,' to be on account and risk of charterers." In the absence of these clauses great delay and expense to vessels are often incurred. Tariff of dues levied on shipping, loading or discharging cargo alongside the Fomento Company's quays at the port of Gijon:—General merchandise, 30 c. per ton; grain and salt, 40 c. per ton; wood, per cubic metre, 30 c.; gunpowder, 7 ptas. 50 c. per ton; dynamite, 5 ptas.; bunker coal, 10 c. per ton; petroleum, 50 c. per ton. Shipowners may protect themselves against the same by inserting in charter-parties and bills of lading a clause to the effect that all wharfage dues at Fomento quays, as well as discharging dues (*impuesto de descarga*), be paid by merchants; otherwise, in the absence of those necessary clauses, the owners will have to pay those dues in addition to the usual navigation dues.

Another useful clause ought not to be overlooked, viz., "Freight to be paid in cash at the current rate of exchange for approved bills at 8 days' sight on London," and thus a loss in exchange of 3 to 5 per cent. will be avoided.

The consular agents generally transact the business of their respective vessels.

There is a dry dock 278 ft. long, 47 ft. wide at the entrance, and 18 ft. on the sill. Ordinary repairs can be executed.

Pilotage.—Every vessel above 50 tons is compelled to take a pilot and a boat with a crew of nine men, for which the following charges are made:—

	Vessels under 80 tons.		81 to 500		501 to 800		801 upwards.	
	Ptas.	c.	Ptas.	c.	Ptas.	c.	Ptas.	c.
Summer	27	50	32	50	37	50	40	50
Winter	32	50	37	50	42	00	46	00

Vessels taking coast pilots ought not to accept their services to bring the vessel to the bar before making an economical agreement in writing.

Port Charges.—Transport Tax:—See Spain. Harbour Dues:—Vessels from European ports with machinery or general merchandise, 2 ptas. 35 c. per ton weight discharged; pitch, clay, sand, and stone, 1 pta. 47 c.

Spain—Gijon (continued).

per ton discharged. Vessels with cargoes from America, Asia, and Africa pay double the above rates. Vessels loading nuts, fruit, and general merchandise for European ports, 1 pta. 55 c. per ton weight shipped; to other ports, 3 ptas. 10 c. per ton. Vessels of all nations may engage in the coast trade, with coal, ore, and cement, 13 c. per ton on the quantity laden at Gijon. Discharging dues at destination, 50 per cent. less than foreign cargoes of the same description. **Labour**:—5 ptas. per day. Discharging ballast, 10*d.* per ton. **Coal**:—23 ptas. per ton. Coal trimming (optional), 2½*d.* per ton. **Collecting Freight**:—2 per cent. **Chartering**:—4 per cent. **Clearing at Custom House**:—Vessels of 100 tons and upwards, 20*s.* **Provisions**:—Beef 6*d.* per lb., biscuits 20 ptas. per cwt.

Pro Forma Charges on a steamer of 503 reg. tons, with a cargo of wheat in and ballast out, drawing 16 ft. loaded:—

	Ptas.	c.
Transport tax and harbour dues at 5 ptas. 10 c. per ton of 1,000 kilos. of cargo, say 800,000 kilos.	4,080	00
Brokerage, £3 3 <i>s.</i>	88	20
Pilotage in and out, 81 ptas.; shifting berths, 25 ptas.	106	00
Boat hire	25	00
Customs dues	50	00
Gratuities	40	00
Interpreter	50	00
	4,439	20 = £176 2 <i>s.</i> 8 <i>d.</i>

HUELVA.

Huelva, in lat. 37°17' N., long. 6°57' W., is situated on the left bank of the river Odiel, about 4 miles from Point Umbria.

Population.—25,000.

Imports.—Coal, coke, iron, steel, machinery, cement, etc.

Exports.—Copper, copper and iron pyrites, lead ore, manganese, cork, nuts, oranges, wine, etc.

Accommodation.—The estuary between the bar and Huelva is 10 miles long. It is available for vessels drawing from 21 to 24 ft., according to tides. The channel across the bar is 420 ft. wide. In the river is excellent holding ground (mud and sand). Dredging operations are carried on regularly, and vessels carrying 6,000 tons now load here.

The depth of water on the bar is:—

	Maximum. Feet.	Minimum. Feet.
Spring tides	28 to 29	18
Neap tides	25 „ 27	19 to 22

The bar is illuminated by four buoys, and two lights on the coast; the channel of the river is also illuminated all the way from the bar to the port.

There is no dry dock, but repairs can be executed.

The large mining companies have their own piers for discharging and loading vessels. The vessels which do not come for these companies are generally loaded and discharged at the Town Pier.

Town Pier.—Length of quayage, 506 ft.; width 73 ft., depth alongside at high water, 27 ft.; and at low water, 20 ft. This pier is now only used for loading or discharging general cargo and coal.

Spain—Huelva (*continued*).

Rio Tinto Pier.—Length of quayage outside, 728 ft.; length of quayage inside, 665 ft.; width of pier, 64 ft. 6 in.; depth of water at high water, 26 ft. depth of water at low water, 15 ft. 6 in. There are ten buoys for warping vessels alongside, five hydraulic 2 ton cranes capable of discharging 30 tons per hour, six hydraulic staithees for the shipment of copper pyrites from 25 to 380 tons per hour, one hydraulic 4 ton crane, and one hand crane to lift 15 tons. An electric belt conveyor has been erected capable of shipping up to 350 tons of pyrites per hour.

Zafra and Huelva Railway Co. Pier.—Length of quayage, 50 ft.; depth of water at high water, 14 ft., depth of water at low water, 3 ft. There are two ballast cranes capable of discharging 80 tons per hour, and two cranes to lift from 3 to 10 tons.

The Zafra and Huelva Railway Co.'s pier is only for shipping ore and produce into lighters for conveyance to vessels which have been prevented through press of work from going alongside the Town Pier, and are therefore lying in the stream, according to the terms of concession. Vessels are not allowed to go alongside.

Tharsis Sulphur and Copper Co. Ltd. Pier.—Available length outside, 319 ft.; available length inside, 318 ft.; width of pier, 59 ft.; depth of water at highest springs, 26 ft.; depth of water at lowest springs, 16 ft. There are two 4 ton movable cranes, two 2 ton movable cranes, and two 15 ton cranes. Pier for small boats, length, 292 ft.; depth alongside at high water ordinary springs, 16 ft.; depth alongside at low water ordinary springs, 7 ft.

New Town Pier.—Length, 833 ft.; width, 72 ft.; minimum depth of water, 28 ft. Vessels can approach this pier on both sides. The pier was opened for traffic in May, 1908, and is exclusively devoted to the shipment of ore. There are eight 5 ton cranes (each capable of loading 150 tons per hour), six locomotives, and 120 wagons of 15 tons each. The estimated loading capacity of the pier is 10,000 tons per day. It has 10 buoys for warping vessels alongside, six lines on the quay and two on the viaduct.

There is no clause of special turn for sailing vessels but only one sole turn "regular" for both steamers and sailers loading.

Harbour Regulations.—1. All vessels must be moored with two anchors, at the spot assigned them by the pilot conducting them into harbour, and masters shall present themselves at the Health Officer's office.

2. No vessel can shift from the said place without a pilot and due permission from the Captain of the Port.

3. Boats cannot be made fast at the pier, but must haul off as soon as the passengers are landed.

4. No vessel can receive or discharge ballast without permission from the Captain of the Port, who will place a guard on board to prevent, through carelessness or otherwise, any falling overboard.

5. A boat will go alongside daily to receive ashes and rubbish, and 10 reals will be charged to each vessel for this service. Masters objecting to this arrangement should give notice at the Captain of the Port's office, in order that they may be informed of the place where this must be deposited.

6. No vessel can receive or discharge cargo without permission from the Captain of the Port, who may place a guard on board if the nature of the cargo demands it.

7. Masters failing to comply with any of the foregoing rules will be fined accordingly.

Spain—Huelva (continued).

Pilotage.—

Vessels from	201 to	250 tons register	Ptas. c.
..	251 „	300 ..	40 00,
..	301 „	400 ..	42 50
..	401 „	500 ..	47 50
..	501 „	700 ..	52 50
..	701 „	1,000 ..	55 00
..	1,000 and upwards	..	57 00
..			60 00

For moving in the river half rates; for night service double rates are charged. Ships not belonging to favoured nations pay 10 per cent. more than the fees given in the above table. In the above table is included the boat for pilots attending ships on their arrival or departure. Sailing ships which arrive or depart, towed by a steamer, pay the same pilotage as the latter. Those ships which depart for or arrive from Palos and Moguer pay half pilotage. When, for the convenience of masters of vessels, by *force majeure*, or by order of the sanitary authorities, a pilot is obliged to remain on board a ship longer than is necessary for leaving or entering the port, he must be boarded and allowed the sum of 7½ ptas. per day, or fraction of a day, which amount must be paid by the brokers or consignees of the ship, as the responsible agents, against a document signed by the master confirming the services rendered by the pilot, and the number of days he has remained on board.

Port Charges.—Transport Tax :—See Spain. Harbour Dues :—

Description of Merchandise, etc.	Loading.		Discharging.	
	Harbour Board Dues.		Harbour Board Dues.	
	Ptas.	c.	Ptas.	c.
First class navigation (coasting trade, including Spanish possessions)—				
Minerals, coal, coke, manures, lime, cement, paving stones, and building materials of clay and cement	0	0-750	0	07-50
Salt	0	25	0	37-50
All other merchandise	0	37-50	0	37-50
Second class navigation (European ports and ports on Asian and African coasts in the Mediterranean, and as far as Cape Mogador in the Atlantic)—				
Iron ore, iron pyrites, and iron slag	0	25	0	50
All other ores	0	60	0	75
Coal and coke	0	25	0	25
Lime, cement, paving stones, and building materials of clay and cement	0	25	0	25
Pig iron	0	25	1	00
Pig lead and copper matte	0	50	1	00
Salt	0	05	1	50
Manures	0	12-50	1	00
Cereals and wine	1	00	2	00
All other merchandise	1	25	2	50
Third class navigation (all other ports of the world)—				
Iron ore, iron pyrites, and iron slag	0	10	0	50
All other ores	0	50	1	00
Coal and coke	0	25	1	00
Lime, cement, paving stones, and building materials of clay and cement	0	25	0	25
Pig iron	0	25	1	00
Pig lead and copper matte	0	50	1	50
Salt	0	05	1	50
Manures	0	12-50	1	00
Cereals and wine	1	25	2	50
All other merchandise	2	50	3	50

Spain—Huelva (*continued*).

Entrance and Clearance:—Steamers with inward cargo for one merchant, and loading with another, pay (say) 75 ptas. entering, and 75 ptas. clearing.

Stevedoring:—Discharging coal in the stream, 80 c. per 1,000 kilos. Loading ore in the stream, 50 c. per 1,000 kilos. Trimmers, 5 ptas. per man per day. Stowing mineral in bags, 62½ c.; in the stream, 75 c. per ton.

It is "custom of the port" for all British ships, and in fact most foreign, to pay 10s. to the English doctor, 5 ptas. to the Seamen's Institute, and 2.50 ptas. to the British Protestant Cemetery.

Pro Forma Charges on a steamer of 1,000 tons burden, from the United Kingdom, inwards with coal, and outwards with iron ore:—

	Ptas.	c.
To transport tax and harbour dues inwards, 75 c. per 1,000 kilos.	750	00
To transport tax and harbour dues outwards, 1 pta. per 1,000 kilos.	1,000	00
Pilotage and shifting (say 600 tons reg.)	125	00
British Consular fees	25	35
Stowing ore, 62½ c. per ton	625	00
Discharging coal at 80 c.	800	00
Ash-boat	2	50
Medical attendance (voluntary)	10	00
Manifest and copies	30	00
Stamps and Custom House documents	7	00
Entering and clearing	125	00
Bill of health (Spanish)	5	00
Usual gratuities	20	00

3,524 85 = £139 17s. 1d.

Pro Forma Charges on a steamer, inwards with ballast, and outwards for European port with wine, cork, lead, etc., loading 400 tons lead, 500 butts wine (325 tons, 275,000 litres), and 50 tons general goods:—

	Ptas.	c.
To transport tax and harbour dues out	2,002	50
Pilotage	125	00
Consul's fees	25	35
Stowing 400 tons lead, at 62½ c.	631	25
" 275 tons wine, at 1.25 ptas. (1,000 litres)		
" 50 tons general, at 75 c.		
Medical attendance (voluntary)	10	00
Manifest and copies	30	00
Bill of health (Spanish)	5	00
Usual gratuities	20	00
Entering and clearing	75	00
Stamps and Custom House documents	6	80

2,930 90 = £111 5s. 9d.

JAVEA.

Javea, Jabea, or Xavia Bay, is in lat. 38°48' N., long. 0°11' E. This bay is about 3 miles wide, and is formed by Cape San Martin on the S.E. and Cape San Antonio on the N.

Population.—9,000.

Imports.—Wood, guano, sulphur, chemical manures, cement, bricks, tiles, iron caldrons, etc.

Exports.—Raisins, almonds, oranges, grapes, onions, and ground nuts.

Accommodation.—The usual anchorage is in 8 fathoms of water, about half-way from Cape San Antonio and the shore. There are no dangers

Spain—Javea (continued).

in the bay. The only dangerous winds are from the E. and S.E., but with good chains there is less danger here than in other ports on the E. coast of Spain. An anchor should be laid towards the shore, so as to prevent the vessel swinging round. During stormy weather it is dangerous to land in the ship's boats.

There is a small pier for lighters, with a crane to lift from 2 to 3 tons.

Shipments commence about August 20, and finish by the beginning of November. The submarine telegraph from the Balearic Islands lands in Javea, about a mile from Cape San Antonio, and places the port in direct communication with all parts of Europe.

Pilotage.—Pilots only go off when signalled for, and charge from 7 ptas. 50 c. to 40 ptas., according to the tonnage of the vessel.

Port Charges.—Tonnage Dues:—For vessels entering for orders or provisions, see **Spain**. Vessels entering in ballast are free of tonnage dues, but have to pay a ballast guard, 2 ptas. per day. **Labourage:**—7 ptas. 50 c. per man per day; 10 ptas. on Sundays and holidays; 1 pta. per hour after sunset on working days; 1 pta. 50 c. per hour on Sundays or holidays. **Cap-tain of the Port:**—5 ptas. **Commission** on freight, 5 per cent. Fresh water free.

Pro Forma Charges on a British steamer loading, say 8,000 half-boxes of raisins, equal to 100 tons net weight, for England:—

	Ptas.	c.
Manifest and other documents	25	00
Clearing ship's papers	20	00
Gratuities	95	00
Loading dues, 1 pta. for each gross ton, 8,000 half-boxes, equal to 120 gross tons	120	00
Stowing, say 20 men at 7 ptas. 50 c. per day	150	00
Commission on freight, 5 per cent.	233	75
	643	75 = £25 10s. 10d.

LA LAJA.

La Laja, in lat. 37°30' N., long. 7°27' W., is situated on the Spanish side of the Guadiana river, about 6 miles below Pomaras.

Accommodation.—The river is narrow and tortuous, and in several parts vessels cannot beat up or down, but must wait for a fair wind or employ a steam-tug. There are two stone quays, alongside which vessels can load 150 to 200 tons of mineral per day.

Port Charges.—Steam Towage:—Across the bar, 3d. per reg. ton; up or down the river, 6d. per reg. ton, loaded or in ballast. **Discharging Ballast:**—6d. per ton. **Ballast Guard:**—2 ptas. 50 c. per day.

Fresh water is plentiful, and fish and mutton cheap.

LAS NEGRAS.

Las Negras, in lat. 36°45' N., long. 2°6' W., is about 5 miles W.S.W. of Mesa de Roldan, and about 30 miles S.E. of Almeria.

Export.—Esparto.

Accommodation.—The usual anchorage is in 9 fathoms of water, on a bottom of sand and mud, about 4 cables length from the shore. Vessels bound for this place clear at Almeria, where the dues are paid. During easterly winds it is considered a safe anchorage for vessels.

Spain.**MÁLAGA.**

Málaga, in lat. $36^{\circ}45'$ N., long. $4^{\circ}24'$ W., is 60 miles N.E. of Gibraltar and 1,655 miles by sea from Newcastle-on-Tyne.

Population.—130,109.

Imports.—Coal, cotton, wood, guano, and codfish.

Exports.—Raisins, almonds, oranges, lemons, pomegranates, olive oil, wine, lead, and iron ore.

Accommodation.—The harbour is protected by breakwaters running out on the E. and W. sides. Vessels moor broadside on and are loaded and discharged direct on to the quay. There is 6,600 ft. of quayage, with 14 to 22 ft. depth alongside. There is a 4-ton stationary crane; two $1\frac{1}{2}$ -ton movable cranes; one 8-ton floating crane, and one 25-ton floating crane. Lighters are also employed. The depth at the entrance to the harbour is $47\frac{1}{2}$ ft. There are no docks, pontoons, slips, or hulks. Coal freights are settled on bill of lading quantity, less 2 per cent., there being no facilities for weighing. Usual discharge, 300 tons per day. Bunker coal and provisions are very dear. Repairs to machinery can be executed.

Pilotage.—Compulsory both in and out, but is cheap (2,000 tons gross, 52 ptas.); 50 per cent. extra by night. Mooring and unmooring, 25 ptas.

Port Charges.—Harbour Dues:—Vessels to or from Europe, 575 ptas. per 1,000 kilos. loaded or discharged; vessels to or from America, 688 ptas. per 1,000 kilos. loaded or discharged. Fresh water is pumped in from the water boat alongside at 6 ptas. per ton.

Pro Forma Charges on a steamer with a cargo of 2,100 tons of coal inwards, and ballast outwards:—

	Ptas.	c.
Pilotage, in and out	48	00
Mooring and unmooring	25	00
Port dues and Custom House charges	2,470	00
Fumigation fee	26	00
Agency fee	150	00

2,719 00 = £107 17s. 8d.

MARBELLA.

Marbella, in lat. $36^{\circ}30'$ N., long. $4^{\circ}53'$ W., is about 38 miles N.E. of Gibraltar.

Population.—About 9,500.

Imports.—Coal, machinery, cement, Portland cement, timber, chemicals, iron rails, sleepers, paint, corn, manure, firebricks, grain, soap, etc.

Exports.—Fruits, wine, cork, ore, esparto, oranges, raisins, sugar, etc.

Accommodation.—An iron pier, belonging to the Marbella Iron Ore Co. Limited, runs about 900 ft. out to sea. Wagons bring the ore to the pier end, so that vessels can load alongside. Good anchorage is about half a mile off the shore, opposite to Fort St. Louis, in 14 fathoms of water on a sandy bottom. Ballast must be thrown overboard two miles from the shore.

Vessels not loading from the Marbella Iron Ore Co. Ltd. are loaded and discharged by means of lighters holding from 6 to 8 tons.

Port Charges.—Tonnage dues:—1 pta. 25 c. for each ton of cargo

Spain—Marbella (continued).

delivered. **Navigation Duty** :—1 pta. per ton on all goods loaded for any port in Europe, except iron ore, on which 25 c. per ton is charged ; for any other ports of the world, 2 ptas. per ton on all goods loaded, except iron ore, on which 50 c. is charged. **Pier Dues** :—The Marbella Iron Ore Co. Ltd., charge 25 c. per ton, or as stipulated in the charter-party. **Ballast** :—2 ptas. 50 c. per ton. **Labour** :—About 5 ptas. per day for steamers ; sailing vessels a little less. **Water** :—Free from the beach ; if taken from alongside the iron pier by means of a hose, 35 ptas. for any quantity. Fresh meat (goat) can be had. All other provisions can be obtained at reasonable prices.

Pro Forma Charges on a steamer of 1,118 reg. tons, bound to :—

	America. Philadelphia. Ptas. c.	Europe. London. Ptas. c.
Navigation duty on 2,286 metrical tons iron ore at 50 c. per ton for America and 25 c. per ton Europe	1,143 00	571 50
Inward manifest, forms, gratuities and clearance	61 00	61 00
Consul's charges, translation, bill of health, etc.	72 75	72 75
Pier charges, 25 c. per ton on 2,241 of iron ore	560 25	560 25
Water	35 00	35 00
	1,872 00 = £74 5s. 6d.	1,300 50 = £51 12s. 0d.

MARIN (Port of Pontevedra).

Marin, in lat. 42°22' N., long. 8°43' W., is situated on the N.W. coast of Spain in Pontevedra Bay, about 6 miles from the entrance.

Population.—About 5,000.

Imports.—Coal and timber.

Exports.—Preserves, pit-wood, salt, and sardines.

Accommodation.—Pontevedra Bay is easy of access in any weather and is well sheltered and secure. A steam tramway of 3 miles connects the port with the railway station of Pontevedra. On the island of Tamba, situated in the bay and opposite to the port, a lazaretto has been established. Small repairs can be executed at the mechanical works, and Pontevedra foundry. There is a good service of lighters, from 20 to 100 tons, for loading and discharging. Coal can be obtained in large or small quantities. Supplies of all kinds can be procured. Towage can be had at moderate prices. Small vessels can go alongside the pier.

Pilotage.—Not compulsory. Rates, in or out, from and to the Points of Udra and Cavicaastro : For a vessel of 50 to 100 reg. tons, 20 ptas. ; 101 to 200 tons, 25 ptas. ; 201 to 400 tons, 30 ptas. ; 401 to 600 tons, 35 ptas. ; 601 to 800 tons, 40 ptas. ; 801 tons and upwards, 45 ptas. Double at night.

Port Charges.—**Customs Dues**.—See **Spain**. **Labour** :—Plentiful, 3 ptas. per day. **Hospital** :—At Pontevedra. Seamen, 2 ptas. per day ; officers, 5 ptas. per day. **Fresh Water** :—4 ptas. per ton (obtained from water boats). **Ballast** :—Sand, brought alongside in lighters, 1 pta. 25 c. per ton, f.o.b. **Bill of Health** :—According to scale.

Pro Forma Charges on a steamer or sailing vessel of 500 reg. tons, coming from England to Marin with a cargo of coal, and loading pit-wood for England :—

Spain—Marin (Port of Pontevedra) (*continued*).

	Ptas.	c.
Manifest and other Customs printed documents	7	20
Customs duty for discharging 800 tons of coal, 400 ptas. ; ditto for loading 800 tons of pit-wood, 2,000 ptas.	2,400	00
Spanish bill of health	10	00
Consul's fee, including British bill of health, £1 2s. 6d.	31	50
Agency for clearing in and out	80	00
	2,528	70 = £100 6s. 1d.

Pro Forma Charges on a steamer calling at Marin for bunker coal :—

	Ptas.	c.
Manifest and Customs printed documents	5	00
Bill of health (Spanish), 2 ptas. ; ditto (English), 10s.	18	00
Consular fees, 10s.	14	00
Agency for clearing	30	00
	67	00 = £2 13s. 2d.

MATARO.

Mataro, in lat. 41°35' N., long. 2°25' E., is 20 miles N.E. of Barcelona.

Population.—19,704.

Import.—Coal.

Accommodation.—There is a good anchorage in about 4 fathoms, sandy bottom, 4 cable lengths from the shore. Large vessels anchor a mile S. of the town in 8 to 10 fathoms. It is quite exposed to all winds. Cargo is discharged by means of launches carrying 4 to 5 tons.

Expenses on vessels about £5. **Ballast** :—2s. per ton.

Owners should stipulate in charters for Mataro "Ship not responsible for weight, freight payable on manifested quantity less 3 per cent. in lieu of weighing," and also, "that in case of bad weather, ship to have option of discharging at Barcelona."

MOTRIL.

Motril, in lat. 36°45' N., long. 3°31' W., is about 32 miles E. of Velez Málaga.

Population.—16,800.

Imports.—Coal, timber, and manure.

Exports.—Grapes, esparto, zinc ore, almonds, etc.

Accommodation.—It is an open anchorage, and with westerly winds it is impossible to load or discharge. There is a good supply of lighters, and in fine weather 400 tons can be discharged in one day. Vessels coming here should be well found in ground tackle.

MUROS.

Muros is in lat. 42°44' N., long. 9°5' W.

Population.—9,660.

Accommodation.—There is a maximum depth of 120 ft. and a minimum depth of 36 ft. The port can accommodate a large squadron of vessels of all draughts, and offers shelter from all winds, with good anchorage bottom. The depth alongside the mole is 20 ft. at low water.

Pilotage.—Not compulsory. Any vessel can enter the estuary without a pilot, solely by the aid of a chart.

Spain—Muros(*continued*).

Port Charges.—**Boat Hire** :—5 ptas. per day. **Ballast** :—2 ptas. 50 c. per ton. **Labour** :—4 ptas. per day. **Brokerage** :—40 ptas. per steamer. **Towage** :—As per agreement.

MUSEL.

Musel, in lat. $43^{\circ}34'$ N., long. $5^{\circ}39'$ W., is situated on the W. side of Gijon Bay.

Accommodation.—This port is now being used for the shipment of coal and iron ore. Vessels of almost any tonnage and draught can lie in certain parts of the harbour always afloat. Dredging has been carried on at the port; the loading berth for iron ore may now be considered quite safe for steamers of 21 ft. draft. There is one electric crane and one electric tip working. The electric crane is situated on the mole, which is now 686 metres (2,238 ft.) in length, and here steamers drawing 30 ft. can lie always afloat. Steamers are loaded by an electric tip capable of handling 150 tons of iron ore or coal per hour.

For **Pilotage, Port Charges**, etc., see **Gijon**.

PALAMOS.

Palamos, in lat. $41^{\circ}53'$ N., long. $3^{\circ}8'$ E., is about 60 miles N.E. of Barcelona.

Population.—3,895.

Imports.—Lime; cement, coal, wood, etc.

Export.—Cork.

Accommodation.—There is a mole, at the end of which there is 20 to 21 ft. of water, and inside 11 to 16 ft. The usual anchorage for large vessels is in 6 fathoms, about 10 cable lengths from the mole. The anchorage is exposed to winds from the S. to S.W. There is a new breakwater under construction, which now gives enough shelter for small vessels, and when completed will be safe for all kinds of shipping.

Pilotage.—57 ptas. 50 c.

Port Charges.—**Ballast** :—1 pta. 75 c. per ton. **Launch** :—10 ptas. per day. **Labour** :—7 ptas. per day.

PALOMARES.

Palomares, in lat. $37^{\circ}19'$ N., long. $1^{\circ}45'$ W., is in the Vice-Consular district of Garrucha.

Accommodation.—Anchorage is in $4\frac{1}{2}$ to 5 fathoms of water on a bottom of sand and mud. During fine weather vessels get good dispatch. Vessels bound for this place must first call at Garrucha to enter, but can clear without calling back, by sending their papers.

A vessel of 567 tons reg., with a cargo of 710 tons of coal in, drawing 16 ft. 2 in., and 571 tons of ore and esparto grass out, drawing $14\frac{1}{2}$ ft., was only 16 days in discharging and loading.

Dues and charges paid at Garrucha :—Custom House dues on cargo discharged and consular charges, £38 10s.

PARAZUELOS.

Parazuelos, in lat. $37^{\circ}30'$ N., long. $1^{\circ}29'$ W., is about 8 miles N.E. of Aguilas, or about half-way between that port and Mazarron.

Spain—Parazuelos (*continued*).**Export.**—Iron ore.

Accommodation.—It is an open bay, without any shelter from winds between S.W. round S. to E. Vessels should always put to sea if the wind begins to blow strong from the E., which invariably sends in a heavy surf. Steamers can always run to Mazarron Bay or to Aguilas for safety. Vessels anchor as near as possible to the loading place. There are two jetties used by vessels loading here. Ships must clear at the Custom House at Mazarron. Vessels need not return to Mazarron to clear out when finished loading. The consignee can take clearances round to Parazuelos, for which service he charges his expenses and time.

Pilotage.—Compulsory. For rates, see **Mazarron**.

Port Charges.—**Navigation Dues** :—50 c. per ton. **Stowage** :—As per charter party. **Consular Fees** :—12s. 6d.

Pro Forma Charges on a steamer loading 4,200 tons iron ore :—

	Ptas.	c.	£	s.	d.
Navigation or transport dues at 50 c. per ton	2,100	00			
Manifest and copies	25	00			
Gratuities to Customs, port, health officials, and carabineers	110	00			
Extra gratuities, to obtain cocket and clearance before finishing loading	15	00			
Pilotage	110	00			
„ taking the vessel from Mazarron to Parazuelos (optional)	50	00			
Permit to load	10	00			
Hire of platforms, baskets, and implements	100	00			
Stamps for documents	15	00			
Permit to leave	5	00			
Spanish bill of health, etc.	22	00			
Boat hire as agreed	30	00			
¹ Diet as at 7 ptas. 50 c. per day, say 6 days	45	00			
Consular fees, 12s. 6d.				0	12 6
Agency, £8 8s.				8	8 0
	2,637	00	=	104	12 7
				£103	4 1

¹ A fixed charge of 7 ptas. 50 c. per day for the Custom officer's travelling expenses, who is supposed to go daily to Parazuelos to superintend loading.

PASAGES.

Pasages is in lat. 43°20' N., long. 1°55' W.

Population.—3,000.**Imports.**—Coal, cotton, etc.**Exports.**—Ore, cider, wine, minerals, stones, fruit, etc.

Accommodation.—The port consists of a narrow but safe inlet, with an average depth of 25½ ft. at low water. It is considered to be the best harbour of refuge between Cherbourg and Ferrol. Vessels of 19 ft. to 25 ft. draught can be discharged alongside the quays at low tide by powerful steam cranes, direct to the railway trucks. Spring tides rise 11 ft. and neaps 9 ft. A railroad connects Pasages with San Sebastian, where vessels enter and clear.

The principal quays are :—

Muelle de la Herrera.—Length of quayage available, 1,147 ft. ; depth of water at high water, 28 ft. ; depth of water at low water, 16 ft. Four steam cranes to lift 3 tons each, and one to lift up to 15 tons.

Spain—Pasages (continued).

Muelle de Anho.—Length of quayage available, 983 ft. ; depth of water at high water, 30 ft. ; depth of water at low water, 18 ft.

Muelle Avanzado la do Norte.—Length of quayage available, 197 ft. ; depth of water at high water, 32 ft. ; depth of water at low water, 20 ft.

Muelle Avanzado la do Oeste.—Length of quayage available, 361 ft. ; depth of water at high water, 32 ft. ; depth of water at low water, 20 ft.

Muelle Transatlantico.—Length of quayage available, 654 ft. ; depth of water at high water, 37 ft. ; depth of water at low water, 25 ft. Two steam cranes to lift 2 tons each.

Muelle Avanzado la do Este :—Length of quayage available, 327 ft. ; depth of water at high water, 37 ft. ; depth of water at low water, 25 ft. Three electric cranes to lift 3 tons each, and one to lift up to 40 tons.

Vessels can always depend on a supply of anchors, cables, hawsers, etc.

Pilotage.—Compulsory coming in, but not going out. Pilotage is charged on net tonnage.

			Ptas.	c.
Under 50 tons net			18	00
From	51 to	100 tons	22	00
"	101 "	200 "	26	00
"	201 "	300 "	33	00
"	301 "	400 "	35	00
"	401 "	500 "	37	00
"	501 "	600 "	43	00
"	601 "	700 "	45	00
"	701 "	800 "	47	00
"	801 "	900 "	49	00
"	901 "	1,000 "	51	00
"	1,001 "	1,200 "	56	00
"	1,201 "	1,500 "	58	00
"	1,501 "	2,000 "	60	00
Over 2,000 tons			66	00

Moorings for vessels that do not take pilots :—

			Ptas.				Ptas.
Under 50 tons net			7	From	701 to	800 tons	19
From	51 to	100 tons	7	"	801 "	900 "	19
"	101 "	200 "	10	"	901 "	1,000 "	22
"	201 "	300 "	10	"	1,001 "	1,200 "	22
"	301 "	400 "	13	"	1,201 "	1,500 "	25
"	401 "	500 "	13	"	1,501 "	2,000 "	25
"	501 "	600 "	16	Over 2,000 tons			28
"	601 "	700 "	16				

Vessels coming in or going out after dark, double the above rates. Mooring is included in the charges made on vessels taking pilots.

Port Charges.—Transport Tax.—See **Spain.** **Wharf Duties :—**
Vessels neither loading nor discharging :—

			Steamers.		Sailing vessels.	
			Ptas.	c.	Ptas.	c.
From	50 to	100 tons	10	00	7	50
"	101 "	200 "	15	00	10	00
"	201 "	300 "	20	00	15	00
"	301 "	500 "	25	00	20	00
Over 500 tons			40	00	30	00

Vessels loading or discharging, full cargo of coal, coke, minerals, cement, china clay, 10 c. per ton loaded or discharged ; full cargo of wood, grain, copra, 20 c. per ton loaded or discharged ; part cargo or general cargo, 40 c. per ton loaded or discharged.

Charges for cranes for a ton of 1,000 kilogrammes :—

Spain—Pasages (*continued*).

	Ptas.	c.
Coal, coke, minerals, and all goods which are imported or exported in bulk	0	40
Iron or steel rails, machines, iron, wood, stones, etc.	0	60
Petroleum, all sorts of drugs, provisions, and things packed up in boxes, barrels, sacks, etc.	1	00

Charges for crane for discharging heavy weights up to 30 tons :—

From	1,001 to	2,000 kilos.	Ptas.	c.
..	2,001	.. 4,000	..	1 50
..	4,001	.. 6,000	..	2 00
..	6,001	.. 8,000	..	2 50
..	8,001	.. 10,000	..	3 00
..	10,001	.. 12,500	..	3 50
..	12,501	.. 15,000	..	4 00
..	15,001	.. 17,500	..	4 50
..	17,501	.. 20,000	..	5 00
..	20,001	.. 25,000	..	5 50
..	25,001	.. 30,000	..	6 00
..			..	6 50

Charges for discharging building materials and railway iron from the side of the ship to the railway station, including crane charges, 1 pta. per ton.

Coal and coke taken from on board, and put into wagons and weighed at the railway station, 1 pta. 25 c. per ton. Other merchandise from the ship to the station, including the charge for cranes, 1 pta. 50 c.

Consular fees for entrance and clearance certificate, 10s.

Pro Forma Charges on a steamer of 2,400 reg. tons from New Orleans :—

	Ptas.	c.
Pilotage, inwards and outwards	211	00
Custom House documents and stamps	25	00
Transport tax on 1,009,021 kilos. at 5 ptas. per 1,000 kilos.	5,045	10
Port dues on 959,290 kilos. wood at 25 c. per 1,000 kilos.	239	80
Port dues on 49,731 kilos. of cotton at 1 pta. per 1,000 kilos.	49	75
Wharfage dues on 959,290 kilos. of wood at 20 c. per 1,000 kilos.	191	85
Wharfage dues on 49,731 kilos. of cotton at 40 c. per 1,000 kilos.	20	00
Discharging 1,009,021 kilos. wood and cotton at 90 c. per 1,000 kilos.	908	10
Usual gratuities	135	00
Brokerage	150	00

6,975 60 = £276 15s. 5d.

PORMAN.

Porman is in lat. 37°38' N., long. 0°48' W.

Population.—About 2,000.

Accommodation.—Porman Bay is three-quarters of a mile wide, and in the middle there is 8 fathoms of water on a sandy bottom, which gradually decreases to the shore. There are lead mines in the vicinity. The best anchorage is rather nearer the western shore than the eastern, where vessels are sheltered from S.W. winds. Vessels now clear at Porman. Charges same as Cartagena.

POVEÑA.

Poveña, in lat. 43°23' N., long. 3°10' W., is within the Customs limit of the port of Bilbao. It is situated a few miles north-westward, at the mouth of the Somorrostro River.

Export.—Iron ore.

Accommodation.—There is a depth of water of 18 ft. at low water springs.

Vessels pay 1s. per ton to cover expenses.

Spain.

PORTUGALETE AND BILBAO.

Portugalete, in lat. $43^{\circ}21'$ N., long. $3^{\circ}4'$ W., is situated at the mouth of the river Nervion.

Population.—About 90,000.

Imports.—Cotton and woollen manufactures, colonial produce, machinery, dried cod, coal, coke, timber, etc.

Exports.—Iron ore, pig-iron, flour, wine, liquorice, skins, chestnuts, etc.

Accommodation.—A breakwater and counter-mole have been constructed and form an excellent harbour of refuge. The entrance is formed by two sea walls or piers, about three-quarters of a cable apart, which are continued along each bank of the river to Bilbao, a distance of $8\frac{1}{2}$ miles. Portugalete is the best anchorage for large vessels, as the river here is deep, and they can make fast to buoys.

Owing to the building of piers the harbour of Portugalete has been very much improved, and the depth of water now (1908) on the bar at high tide is 24 ft. at ordinary springs, and at neaps 19 ft. ; at low tide never less than 11 ft.

The passage up the river to Bilbao is from 220 to 514 ft. wide between the moles, with a depth of 10 to 15 ft. at low water spring tides ; springs rise 9 ft. at Bilbao and 12 ft. at Olaveaga, and 13 ft. at the bar.

Outside the harbour there is a water area of 5,500 acres, with a depth at low water of from 13 to 42 ft. There is good anchorage, and mooring buoys at which vessels of any tonnage can load and discharge by means of barges.

Darsena del Desierto (tidal basin) has an area of 8 acres and 2,140 ft. of quayage. The entrance is 260 ft. wide, and at high water ordinary springs 20 to 23 ft. of water.

Darsena de Axpe has an area of 34 acres, but the quayage is not available. The entrance is 330 ft. wide, and at high tide, ordinary springs, there is 22 to 26 ft. of water. There is a steam crane to lift 30 tons.

Muelle St. Mames has a quayage of 2,952 ft. and a depth of 26 ft. at high, and 10 ft. at low, ordinary spring tides. There is a steam ballast crane capable of discharging 30 tons an hour.

Uribitarte Quay is 2,132 ft. long, with a depth of 28 ft. at high, and 14 ft. at low, tide. There are two steam ballast cranes capable of discharging 30 tons per hour ; one steam crane to lift from 1 to 25 tons.

Muelle de Ripa has 1,049 ft. of quayage, with a depth of 26 ft. at high, and 10 ft. at low, tide. There are two steam ballast cranes capable of discharging 30 tons per hour ; four steam cranes to lift from 1 to 3 tons.

La Salve Quay is 787 ft. long, with a depth of 28 ft. at high, and 12 ft. at low, tide.

Arenal Quay is 1,377 ft. long, with a depth of 26 ft. at high, and 10 ft. at low, tide. There are three steam ballast cranes capable of discharging 30 tons per hour ; four other cranes to lift from 1 to 3 tons.

Nervion River.—There are mooring buoys situated along the river, and vessels discharge by means of barges or at the quays. There are twenty-four spouts for loading iron ore at different parts of the river, which belong to several railway companies, and which can be reached at high tide, ordinary springs, by vessels drawing upwards of 20 ft.

Dry Docks.—At San Nicolas, the Sociedad Anonima “ Astilleros del

Spain—Portugalete and Bilbao (*continued*).

Nervion" have a fine dry dock. Length, 440 ft.; on the blocks 427½ ft.; width at the entrance, 73 ft.; depth on the sill, 22½ ft.

TARIFF.

(This tariff only applies to vessels entering the dry dock for survey.)

	Entrance. Cents. per ton.	Daily Charge. Cents. per ton.
Steamers up to 650 tons	65	33
" from 650 tons to 2,500	15	7
" " 2,501 " " 4,000	4	2
" " 4,001 " upwards	3	—
Sailing vessels up to 650 tons	55	30
" " from 651 " to 2,500	13	7
" " " 2,501 " upwards	3	1

Shorage—

Up to 2,000 tons	50
For every 500 tons over or fraction of same	15

Pump—

For the first hour of service of the pump and hose	35
For each successive hour	6

When a vessel remains in the dock more than ten days, a discount of 25 per cent. will be deducted from the charges for the days above this number.

Vessels which go into dock for the purpose of cleaning, scraping, and painting, or that are repaired by the Astilleros del Nervión, are exempt from entrance and dock dues.

BILBAO DRY DOCKS.

The following are the dimensions of the dry docks situated on the river Nervión, about a mile below the town of Bilbao :—

No. 1.	Ft. in.	No. 2.	Ft. in.	No. 3.	Ft. in.
Length	330 0	Length	320 0	Length	608 0
Width	50 0	Width	92 0	Width at entrance	60 0
Width of gate	50 0	Width of gate at top	60 0	Depth on the sill,	
Depth on blocks at		" " at bottom	50 0	high water ordin-	
spring tides	11-12 0	Depth on blocks at		ary springs	22 0
		spring tides	12-13 0		

Nos. 1 and 2 can be used together if required.

The tariff for these docks, for steamers, is as follows :—

Tonnage of Steamer.	Entrance Fee. Cents. per ton.	Daily Charge Cents. per ton
Up to 600 tons	63	31
From 601 to 2,000 tons	15	8
Above 2,001 tons	8	2

After 10 days' stay the average charge is reduced by 20 per cent.

Steamers using these docks for repairs pay 50 per cent. of the above tariff.

The port of Bilbao extends from the bar at the mouth of the river to the town. The climate is healthy. A quarantine of observation (three days) can now be performed here. The Board of Health has been transferred to Portugalete, and the quarantine visit is performed at the entrance of the port, vessels proceeding to their various destinations on the river without delay.

A clause should be inserted in charter parties :—" Freight or advances to be paid in cash at the current rate of exchange."

Spain—Portugalete and Bilbao (continued).

Charters should read—"To proceed to Bilbao and there load as ordered."

At Olaveaga there is a dry dock, and all kinds of stores and provisions may be obtained here as well as at Bilbao.

Pilotage.—Fees from the sea to the Cadagna River (Luchana), or vice versa :—

	Per English Foot. Ptas. c.
Ships up to 1,000 tons (gross)	3 00
„ from 1,001 to 2,000 tons (gross)	4 50
„ „ 2,001 tons upwards	5 00

Fees for shifting in the river, from Axpe to Bilbao :—

	One Section. Ptas.	Two Sections. Ptas.	Three Sections. Ptas.
Ships up to 1,000 tons	5	8	10
„ from 1,001 to 2,000 tons	10	18	25
„ „ 2,001 tons upwards	15	28	35

The pilotage dues are the same for night services.

A captain who calls for a pilot and subsequently does not employ him will have to pay one-half the fees. Pilotage is compulsory for foreign ships, and also for Spanish ships of upwards of 250 tons.

Receipts for payment of pilotage dues will also bear the signature of the pilot master. All ships entering the port will pay once the following fees for services that will be rendered by the mooring officers :—

	Per ton Ptas.
Ships up to 250 tons	2
„ from 251 to 500 tons	3
„ „ 501 to 1,000 tons	6
„ „ 1,001 to 2,000 tons	12
„ „ 2,001 tons upwards	17

For the purpose of swinging ships round, and for short shiftings within a section, it will only be necessary to notify the mooring officer. It is forbidden to use chains for mooring purposes.

Ships of less than 500 tons gross are not compelled to take mooring boats ; over 500 tons mooring boat inwards is compulsory. Tariff from sea to Reach Desierto or Luchana, day, 25 ptas. ; night, 37 ptas. 50 c. Sea to Bilbao, day, 37 ptas. 50 c. ; night, 50 ptas. Boat outwards is not compulsory, but it is customary to take one in order to land the pilot.

Port Charges.—Port Dues :—The following port dues are payable at this port by vessels and include Customs and harbour dues and navigation tax.

Charters should stipulate that all other dues, or any additional dues, should be paid by merchants.

	Per ton. Ptas.
Discharging.—Coastwise, coal	0 37½
„ „ general cargo	1 65
European ports, coal and coke	0 55
„ „ general cargo	2 75
Other ports, general cargo	5 50
Loading.—Coastwise, iron ore	0 47½
„ „ general cargo	1 10
Foreign, iron ore	1 05
„ „ general cargo	1 70

Pro Forma Charges on a steamer, in with ballast and out with about 2,500 Spanish tons of iron ore, loaded at Sestao (Portugalete) :—

Spain—Portugalete and Bilbao (*continued*).

	Inwards. Ptas. c.	Outwards. Ptas. c.
Pilotage	71 68	83 55
„ and boat from Reach to Sestao	55 00	—
Manifest and stamped papers for Custom House	30 00	—
Towage	75 00	105 00
Orders for pilot	5 00	—
Custom House clearance fees	—	20 00
Consular fees	20 50	—
Custom House dues and harbour dues, 2,249,070 kilos. at 1 pta. per 1,000 kilos.	—	2,249 07
Brokerage, £4 4s.	—	120 00
Board of health report	—	5 00
Post and petty expenses	—	10 00
Commission on advance, 3 per cent.	—	86 24
Sanitary dues	—	20 00
Town tax	—	5 00
	257 18	+ 2,703 86 = 2,961 ptas. 4 c.
		= £117 9s. 9d.

PUERTO DE MAZARRON.

Mazarron, in lat. 37°34' N., long. 1°20' W., is situated about 16 miles W. of Cartagena by sea.

Population.—About 4,000.

Imports.—Coal and coke.

Exports.—Silver lead, iron ore, and salt.

Accommodation.—There is a fine natural harbour with a depth at the entrance of 20 fathoms, but it is exposed to winds from the S. The town is about 5 miles inland. The anchorage ground in 6 to 7 fathoms is reasonably safe in all weathers. The holding ground is good; masters very seldom have to proceed to sea on account of stormy weather. Vessels moor with two anchors ahead. There are three small jetties. Vessels are discharged and loaded by lighters. Coal can be discharged at the rate of 350 to 400 tons per day; coke at 200 to 250 tons. Lead can be loaded at the rate of 500 tons per day.

Pilotage.—Compulsory. Rates according to tonnage. Harbour pilotage, in and out and mooring, under 1,000 reg. tons, 50 ptas.; above, in proportion.

Port Charges.—Customs Dues:—See **Spain**. **Ballast:**—1 pta. 50 c. per ton. **Labour:**—5 ptas. to 6 ptas. per man per day. **Customs Transport Dues:**—50 c. per ton (except on salt, which is 10 c. per ton). **Boat Hire:**—5 ptas. per day. **Brokerage:**—From £4 4s. to £8 8s., according to the size of the vessel or cargo. **Stevedore:**—Discharging coal and coke, 1s. per ton; loading lead, 75 c. per ton.

Pro Forma Charges on a steamer of 1,000 reg. tons, with a cargo of 1,800 tons of coal, from Newcastle-on-Tyne:—

	Ptas. c.
Customs transport dues	900 00
Manifest and copies	25 00
Gratuities, customs, health, port officers, and carabineers	85 00
Pilotage	90 00
Permit to discharge	10 00
Stamps for documents	15 00
Permit to leave	5 00
Certificate of guarantee for provisions on board, if proceeding to other Spanish ports	25 00

Carried forward 1,155 00 = £45 16s. 6d.

Spain—Puerto de Mazarron (*continued*).

	£	s.	d.	£	s.	d.
Brought forward				45	16	6
Consular fees, simple, for custody of articles and clearances	0	12	6			
Stevedores	90	0	0			
Agency	5	5	0			
	<hr/>			95	17	6
				<hr/>		
				£141	14	0

REQUEJADA OR SAN MARTIN DE LA ARENA.

Requejada, in lat. 43°27' N., long. 4°1' W., is about 16 miles up the river Besaya. Between Requejada and the mouth of the river there are two small villages, called San Martin de la Arena, and Suances; hence the port is frequently called Port Suances or San Martin de la Arena.

Exports.—Zinc and iron ore.

Accommodation.—No vessels drawing more than 13½ ft. should charter for this port. Railway material and grain are discharged here. No other kind of merchandise is allowed to be disembarked. Vessels arriving in ballast discharge it at Suances.

Pilotage.—Strangers should not attempt to enter without a pilot. 40 c. per reg. ton.

Port Charges.—Tonnage Dues.—See **Spain. Towage**:—50 c. per ton loaded. **Shipbroker**:—Entrance and clearance, 30 to 50 ptas. **Ballast**:—1 pta. per ton. **Port Dues**:—For the works on the river, zinc ore, 1 pta. per ton; iron ore, 50 c. per ton.

Provisions of all kinds can be obtained at cheap prices.

Pro Forma Charges on a steamer of 239 reg. tons, loading zinc ore:—

	Ptas.	c.
Pilotage, in and out over the bar	47	80
" up and down river	47	80
Rowing boat, in and out over bar	44	00
" up and down river	30	00
Flag dues	7	50
Custom House dues, 540 tons at 1 pta. 50 c.	810	00
Port dues, 540 tons at 1 pta.	540	00
Consular dues	35	62
Mooring	2	00
Manifest and other documents at Custom House	19	80
Translation of list of provisions	6	00
Brokerage	50	00
Letters and telegrams	11	00
	<hr/>	
	1,651	52 = £65 10s. 6d.

Pro Forma Charges on a sailing vessel of 333 reg. tons, loading iron ore:—

	Ptas.	c.
Pilotage, in and out over the bar	66	60
" up and down river	66	60
Rowing boat, in and out over bar	44	00
" up and down river	30	00
Flag dues	7	50
Custom House dues, 600 tons at 50 c.	300	00
Port dues, 600 tons at 50 c.	300	00
Mooring	2	00
Stevedore, stowing	25	00
Gratuities	5	00
	<hr/>	
Carried forward	846	70

Spain—Requejada or San Martin de la Arena (*continued*).

Brought forward	Ptas.	c.
Manifest and other documents at Custom House	846	70
Translation of list of provisions	19	80
Brokerage	6	00
Telegrams and letters	50	00
	13	50
<hr/>		
	936	00 = £37 2s. 9d.

RIVADÉO.

Rivadéo is in lat. 43°34' N., long. 7°5' W.

Population.—9,500.

Exports.—Pine logs, iron ore, eggs, ham, etc.

Accommodation.—The depth on the bar at this port is 19 ft. at low water ordinary spring tides. Owing to the short depth inside the bar, only vessels up to about 500 tons can reach the commercial port, where there is about 8 ft. less water than on the bar. Cargo is discharged from large vessels by means of lighters. Vessels of small tonnage can go alongside the quays. A mineral shoot has been established about half a mile seaward of the town. The depth in the channel leading from the bar to this shoot is 24 ft. at low water ordinary springs, and the depth under the shoot is 20 ft. The loading capacity of the shoot is 100 tons per hour. The rise and fall of spring tides is 14 to 15 ft. Wooden vessels can be repaired. Fresh water and provisions can be obtained.

Pilotage.—Compulsory, in and out, 80 ptas.

Charges same as at Vivero.

RIVADESELLA.

Rivadesella is in lat. 43°30' N., long. 5°7' W.

Population.—About 1,200.

Imports.—Maize, lard, etc.

Exports.—Staves, nuts, ore, etc.

Accommodation.—The entrance is about 4 cables wide, and carries 8 to 21 ft. at low water. With a heavy sea from the N.W. the water breaks on the bar, and renders the entrance almost impracticable. About 3 cables within the bar there is ample security in 21 ft. at low water, where vessels generally moor, or secure to the mole. Small vessels go further in, and, as the bottom consists of soft mud, take no harm from grounding.

Pilotage.—Pilot launches are in attendance, ready to assist vessels in and out. Pilotage rates :—

Vessels from	1 to	50 tons	Ptas.	Vessels from	651 to	800 tons	Ptas.
" "	51 "	100 "	19	" "	801 "	1,000 "	84
" "	101 "	150 "	24	" "	1,001 "	1,500 "	114
" "	151 "	200 "	29	" "	1,501 "	2,000 "	124
" "	201 "	250 "	34	" "	2,001 "	2,500 "	134
" "	251 "	300 "	39	" "	2,501 "	3,000 "	140
" "	301 "	350 "	49	" "	3,001 "	3,500 "	145
" "	351 "	400 "	54	" "	3,501 "	4,000 "	150
" "	401 "	450 "	59	" "	4,001 "	5,000 "	160
" "	451 "	500 "	64	" "	5,001 "	6,000 "	170
" "	501 "	650 "	79				

Spain—Rivadesella (continued).

Rates for mooring and shifting :—

Vessels from	51 to	100 tons	Ptas.	Vessels from	651 to	800 ton	Ptas.
" "	101 "	150 "	6	" "	801 "	1,000 "	27
" "	151 "	200 "	7	" "	1,001 "	1,500 "	29
" "	201 "	250 "	8	" "	1,501 "	2,000 "	30
" "	251 "	300 "	9	" "	2,001 "	2,500 "	35
" "	301 "	350 "	10	" "	2,501 "	3,000 "	40
" "	351 "	400 "	15	" "	3,001 "	3,500 "	43
" "	401 "	450 "	17	" "	3,501 "	4,000 "	46
" "	451 "	500 "	20	" "	4,001 tons and above		49
" "	501 "	650 "	22				50
" "			25				

Pilotage is charged both for entering and leaving, and during the night 50 per cent. more is added. The total tonnage is taken as a basis for charging.

Port Charges.—Loading and Discharging Dues :—See Spain.

SAGUNTO.

Sagunto is in lat. 39°39' N., long. 0°11' W., about 17 miles N.E. of Valencia.

Population.—7,000.

Export.—Iron ore.

Accommodation.—Sagunto is a new port belonging to the Compañia Minera de Sierra Menara Bilbao. There is a depth of 26 ft. at low water. The mole or pier now in course of construction is in an E.S.E. direction, and is 595 metres (1,950 ft.) in length, and gives very good shelter to vessels loading here. In berth No. 1 the loading is done by means of steam cranes. These are four in number, with a lifting capacity of 3 tons—average about 1,700 tons per working day of 10 hours. In berth No. 2 the loading is done by means of an electric plant which drives very powerful lifts capable of dealing with 26 ton trucks ; average, about 3,000 tons per working day of 10 hours.

Pilotage.—Not compulsory.

Port Charges.—Clearance Fees :—200 ptas. **Labour :—**About 4 ptas. 25 c. per man per day.

Pro Forma Charges on a steamer of 1,255 reg. tons, ballast in, and cargo of 4,250 tons iron ore out :—

	Ptas.
Harbour dues at 10 cents per ton of cargo	425
Brokerage	200
¹ Transport tax at 50 c. per ton of cargo	2,125
Custom House papers in and out	40
Bill of health (according to tariff)	25
Gratuities	110

2,925 = £116 1s. 1d.

¹ For America 20 cents. per ton.

SALOU.

Salou, in lat. 41°4' N., long. 1°7' E., is a roadstead about 6 miles S.W. of Tarragona.

Since the completion of the harbour of Tarragona the roadstead is never used by oversea vessels, and shipowners are recommended on no account to accept a charter for this place.

Spain.**SALTA CABALLO.**

Salta Caballo is in lat. $43^{\circ}26'$ N., long. $3^{\circ}19'$ W., situated 2 miles S.E. of Castro Urdiales and 16 miles N.W. of Bilbao.

Export.—Iron ore.

Accommodation.—This is a private loading place belonging to the Compania Minera de Setares-Bilbao. There is a depth of 27 ft. at low water spring tides at the loading pier. It is well sheltered from N.W. winds. Steamers of 3,500 tons cargo can be loaded in one working day of 10 hours. There are four iron buoys for the fastening of vessels, one N., one N.E., one S.E., and one S., and two mooring bits on shore. Steamers loading at Salta Caballo have to call first at Castro Urdiales to get free pratique.

Pilotage.—Compulsory.

Port Charges.—Steamers loading here pay 1s. per ton cargo, which covers all port charges.

SAN CARLOS DE LA RAPITA.

(See **Alfaques**, p. 538).

SAN ESTEVAN DE PRAVIA.

San Estevan de Pravia is in lat. $43^{\circ}50'$ N., long. $6^{\circ}5'$ W.

Population.—2,000.

Import.—General merchandise.

Accommodation.—There is a depth of water at lowest spring tides of $8\frac{1}{2}$ ft., and at high water, spring tides, 22 ft. Wharves are now under construction. The total length will be 4,500 ft. At present there are no facilities for loading and discharging.

Pilotage—Compulsory for foreign vessels. Steamers of 1,000 tons and upwards, 37 ptas.; sailing vessels, 40 ptas.

Mooring.—14 ptas.

Port Charges.—**Ballast**:—75 c. per ton. **Labour**:—5 ptas. per day. **Brokerage**:—For a vessel of 1,200 tons, 100 ptas. **Boat Hire**:—30 ptas. **Towage**:—50 ptas.

SAN LUCAR DE BARRAMEDA.

San Lucar de Barrameda, in lat. $36^{\circ}47'$ N., long. $6^{\circ}20'$ W., is situated on the east side of the mouth of the river Guadalquivir. Its port, called Bonanza, is two miles up the river, where the Custom House, post-office, and health departments are established.

Population.—About 27,000.

Import.—Coal.

Export.—Empty casks.

Accommodation.—The bar of San Lucar is 5 miles long, and vessels must enter through a narrow canal called "Riza," one-fifth of a mile wide. The depth of water on the bar at high tide is 19 ft., and vessels drawing 18 ft. can only enter with safety at high water. There are four dangerous shoals outside the mouth of the river, namely, Pollero, with 7 ft. of water at low tide; Galonera, with 8 ft.; Picacho and Salmedina, visible at low water.

Bonanza has a very safe and commodious anchorage for large vessels, with over 6 fathoms of water, and an iron pier 90 metres (295 ft.) long, but

Spain—San Lucar de Barrameda (*continued*).

only one vessel at a time can come alongside. Loading and discharging operations can be effected from and to wagons, as a railway runs up to the point of the pier.

All vessels entering this port must present their manifests and provision lists at the Custom House of Bonanza, and vessels bound for Seville must likewise leave their original manifests at this Custom House but obtain a certified copy, which they take to Seville.

The Custom House at Bonanza is of the second order, and only a limited number of articles are allowed to be imported, viz., sulphur, coal, staves, hoop-iron, grains, flour, and empty casks. All other kinds of merchandise have to be introduced through the Custom House of Cadiz or Seville.

Pilotage.—The rates levied on the gross tonnage of the ship are as follows :—

Vessels	from	1 to	50 tons					Sallers.	Steamers.
								Ptas.	Ptas.
		51	100	"	"	"	"	29	21
"	"	101	200	"	"	"	"	35	30
"	"	201	300	"	"	"	"	45	39
"	"	301	400	"	"	"	"	55	47
"	"	401	500	"	"	"	"	65	54
"	"	501	600	"	"	"	"	75	61
"	"	601	700	"	"	"	"	85	68
"	"	701	800	"	"	"	"	95	74
"	"	801	900	"	"	"	"	105	79
"	"	901	1,000	"	"	"	"	115	83
Steamers	"	1,001 upwards,	2 pesetas per 100 tons.					125	86

Port Charges.—**Steam-tugs** :—As per agreement. **Tonnage Dues** :—
See Spain. Labourage :—At the rate of 5 ptas. from sunrise to sunset, and 1 pta. extra per hour at night. These rates are for work inside the port, and double for outside labour. **Clearing at Custom House** :—10 ptas.
Gratuities :—12 ptas. 50 c. **"Fondeo" Visit** (Customs Search) :—5 ptas.
Manifests and Stamps :—10 ptas. **Boat Hire** :—4 ptas. **Consular Fees** :—
 5s. **Bill of Health** :—5 ptas. **Translation of Documents** :—15 ptas.
Agency Fee :—45 ptas.

SAN MARTIN DE LA ARENA.

(See *Requejada*, p. 575.)

SAN SEBASTIAN.

San Sebastian, in lat. 43°20' N., long. 2°0' W., is about 3 or 4 miles to the west of Pasages.

Population.—37,812.

Import.—Coal.

Exports.—Iron, wool, cement, and paper.

Accommodation.—Large vessels anchor S.E. of Santa Clara Island, at the entrance of the bay, in from 3 to 5 fathoms of water, but they are very exposed to gales from W. to N. There are buoys with large rings secured to heavy moorings, and vessels ride with two anchors ahead and two astern. Besides these buoys there are strong chains fastened to Santa Clara Island, and vessels can ride safely moored with these chains, besides their own anchors, in strong gales. The depth of water at the entrance of the harbour and dock during spring and neap tides is 17 and 12 ft. respectively. The dock has a water area of 4 acres, with 1,210 ft. of quayage with 16 ft. alongside at high, and 13 ft. at low, ordinary spring tides.

Spain—San Sebastian (*continued*).

There are two steam cranes to lift from 1 to 3 tons ; one other crane to lift from 1 to 2½ tons, and sheer legs to lift 6 tons.

Pilotage.—Compulsory for entrance, but not for departure, for all vessels above 50 tons.

For pilot and a boat with 10 men, from the sea to Santa Clara anchorage or to the dock :—

	Day. Ptas. c.	Night. Ptas. c.
Under 50 tons	20 50	31 62
From 51 to 100 tons	27 50	41 12
" 101 " 200 "	34 50	50 62
" 201 " 300 "	38 50	56 37
" 301 " 500 "	44 00	64 75
Over 500 tons	52 00	76 25

Boat assistance, for movements in the harbour—for boat and 11 men :—

	Ptas. c.
From 51 to 100 tons	20 00
" 101 " 200 "	26 50
" 201 " 300 "	29 75
" 301 " 500 "	33 50
Over 500 tons	40 00

Pilot boats carry a flag with the letter P, and must go out a mile from the shore in good weather.

Cables have to be hired at the rate of 5s. 10d. per day, as a ship's usual mooring gear is not considered sufficient.

Port Charges.—**Lighterage** :—4 to 5 ptas. per 1,000 kilos.

STA. EUGENIA DE RIVEIRA.

Sta. Eugenia de Riveira is in lat. 42°32' N., long. 9°0' W.

Population.—17,000.

Accommodation.—There is a good bay, and safe anchorage for vessels. There is a depth at high water of 8 fathoms, and at low water of 6 fathoms.

Pilotage.—Steamers from 50 to 100 reg. tons, 15 ptas. ; from 101 to 200, 20 ptas. ; from 601 to 1,000, 45 ptas. Intermediate rates in proportion. There are numerous pilots here.

Port Charges.—**Boat Hire** :—5 ptas. per day. **Towage** :—As per agreement. **Labour** :—5 ptas. per day. **Brokerage** :—5 per cent.

Pro Forma Charges on a steamer arriving from Oporto, and leaving for Hamburg :—

	Ptas. c.
Pilotage inwards, 50 ptas. ; outwards, 50 ptas.	100 00
Making out copies of the manifest	10 00
Stamp duties on the manifest	2 00
Labour on board	117 00
Clearance 10, registration 5, gratuities 109-35 ptas.	124 35
Telegrams	18 00
Advertisements	21 00
Sanitary and port clearance	15 00
Handed to the captain in cash	60 00
Wooden props for stowage of barrels	15 00
Boat hire for berthing and unberthing	15 00
Overseer 5, documents 10-15 ptas.	15 15
Watching	15 00
Cargo lighterage	80 00
Reimbursements to collect in bills of lading, £2 3s.	60 25
5 per cent. commission on 6,486 ptas. 8 c. taken at Riveira	324 30

992 05 = £39 7s. 3d.

Spain.

SANTANDER.

Santander, in lat. 43°30' N., long. 3°50' W., is about 50 miles W. of Bilbao.

Population.—54,694.

Imports.—Sugar, textile fabrics, salted cod-fish, pitch, coal, timber, tobacco, etc.

Exports.—Iron, copper, and zinc ore, cobalt, wheat, wool, wine, and flour.

Accommodation.—The largest vessels can enter the port as far as the anchorage opposite the town. It should not be entered during a N.W. gale. There is a length of 4,920 ft. of wooden piers, at which the depth of water fluctuates at low water ordinary spring tides, between nil and 9½ ft., mostly with soft bottom. The long timber piers are headed with eleven wharves, of which four have a length of berthing space of more than 130 ft. (two being 278 ft.), with a minimum depth at low water, ordinary springs tides, of 22 ft. with soft bottom. Most of these wharves and piers are furnished with rails, so that the railway trucks can be brought to the ship's side. One of these wharves (the railway wharf, belonging to the Northern Railway Co.) has a fixed crane to lift 15 tons. There is a hand crane on Albareda wharf to lift 10 tons; one hand crane to lift 6 tons; one hand crane to lift 4 tons; one new steam crane on Maura wharf to lift 30 tons. There are three spouts for loading iron ore in the Astillero river. The depth of water in the channel leading to the wharves and piers is, at low water ordinary spring tides, 18 ft.; at high water ordinary springs, 34 ft.; but all the berths which lie before the passage have deeper water. The port of Santander is accessible at any time for any size steamers. The largest Spanish, French, German and English mail-boats call here. For repairing vessels the harbour authorities are constructing a large new dry dock, which is now being finished. There is a slip to take vessels 185 ft. long and 9 ft. draught.

It is advisable not to consent to "terms and conditions," as "Loading or discharging according to custom of the port," as there does not exist any custom, as a rule, and with such conditions captains will always have disputes and difficulties with shippers or receivers here. No charter parties are to be made out for Santander with the clause: "Quick steamer dispatch." Under the clause: "As fast as steamer can deliver or receive" is to be understood here: Discharging, per day, about 160 tons general cargo, 300 tons coal, 300 hogsheads tobacco, 100 standards timber. Loading, per day, about 350 tons iron ore.

As overcharges may appear in the accounts, shipmasters are advised by the Vice-Consul to show their broker's accounts to him, in order that the owners of their vessels may not be put to unnecessary expense.

Masters of vessels proceeding to take ore in the creeks of Astillero and San Salvador should be careful with regard to the safety of the berths selected by the shippers for loading.

When the tugboat belonging to the port cannot proceed to sea it waits as near to the mouth of the harbour as weather permits. Vessels having to perform a quarantine of "observation" can do so here.

Pilotage.—The port should not be entered without a pilot, who will always be found off the entrance, and in bad weather under the lee of Puerto

Spain—Santander (*continued*).

Point. Sailing vessels above 100 tons and steamers above 250 tons must take a pilot.

TARIFF FOR STEAMERS.

		For each Foot Draught, 3'048 decimetres=1 foot.
		Ptas. c.
Up to 500 tons gross.		3 00
From 501 to 1,000 tons gross		3 50
" 1,001 " 2,000		4 00
" 2,001 " 3,000		4 50
" 3,001 " 4,000		5 00
" 4,001 " 5,000		5 50
" 5,001 " 6,000		6 00
" 6,001 " 7,000		6 50
Above 7,000 tons		7 00

Port Charges.—Tonnage and Harbour Dues :—

Ptas. c.		
3 75	for every 1,000 kilos. intaken weight of	general cargo for European ports.
0 75	" 1,000 kilos.	ore "
7 50	" 1,000 kilos.	general cargo for other foreign ports.
0 30	" 1,000 kilos.	ore "
7 50	" 1,000 kilos. discharged	general cargo from European ports.
0 75	" 1,000 kilos.	coal "
7 50	" 1,000 kilos.	general cargo from other foreign ports.

Vessels under quarantine pay $\frac{1}{2}$ real per reg. ton per day. **Provisions :—**
Provisions and supplies are abundant. **Water** is obtained alongside from tanks, and from fountains at the mole.

Pro Forma Charges on a mail steamer of 6,748 gross (2,215 net reg.) tons, coming from Mexico and Cuba, with 500 bales of tobacco, 600 bags of coffee (130 tons all told), and 150 passengers, leaving in ballast for Cadiz :—

	Ptas. c.
Pilotage, inwards (200 ptas. and outwards (142 ptas.)	342 00
Gratuity for quick dispatch	15 00
Stevedore and labourage	151 10
Sanitary dues	43 50
Custom House forms and stamped paper.	24 70
Reporting vessel at Custom House and clearance outwards	171 00
Certificate for ships stores for Cadiz	7 00
Steam boat hire (one day)	50 00

804 30 = £31 18s. 3d.

Barges (for unloading) are paid by receivers of the cargo, not by the ship.

Pro Forma Charges on a Uruguayan steamer of 1,263 reg. tons, arriving in ballast, and leaving for Tyne Dock with a cargo of iron ore :—

	Ptas. c.
Pilotage inwards	82 00
Pilotage outwards	143 00
Telegrams	21 70
Manifest and stamped papers for Custom House	25 00
Mooring boat at Astillero	40 00
Boat attendance to carry pilot on board	5 00
Gratuities to Custom House officers and clerks, etc.	55 00
Fresh water	32 00
Clerks, expenses, trams, etc.	15 00
Sanitary authorities' visit and bill of health	23 00
Cash to captain	2,639 07
Custom House clearance	25 00
Consular fees	63 45
Loading dues, 75 c. per 1,000 kilos.. 3,209,195 kilos.	2,406 90
Postages	7 15
Towage from Astillero wharf	125 00
Special messenger to Astillero	10 00
Brokerage	200 00

5,918 27 = £234 16s. 5d.

Spain—Santander (*continued*).

Pro Forma Charges on a British steamer of 933 reg. tons, with a cargo of coal in, and iron ore out :—

	Ptas.	c.
Pilotage inwards (night time)	190	00
Pilotage outwards	124	00
Discharging dues at 75 c. per 1,000 kilos., 1,805,500 kilos.	1,354	12
Telegrams	19	80
Manifest and stamped papers for Custom House, in and out	25	00
Legalizing and translation	10	00
Mooring boat at San Salvador	55	00
Boat attendance to carry pilot on board	5	00
Gratuities to Custom House officers and clerks, etc.	60	00
Clerks' expenses, trams, etc.	15	00
Provision account	280	00
Discharging account, 1,778 tons at 1 pta. per ton	1,778	00
Sanitary authorities' visit and bill of health	18	00
Cash to captain	450	00
Custom House clearance	20	00
Consular fees	22	00
Loading dues at 75 c. per 1,000 kilos., 1,988,790 kilos.	1,491	58
Postage	4	90
Trimming cargo	35	00
Towage from San Salvador quay	125	00
Dispatch money	100	00
Special messenger to Astillero	10	00
Brokerage inwards	150	00
Brokerage outwards, £4 4s.	117	60
	6,460	00 = £256 6s. 3d.

SANTONA.

Santona is in lat. 43°30' N., long. 3°29' W.

Accommodation.—Santona harbour is formed by an inlet, divided by various channels. One of these channels is navigable for vessels drawing 13 ft. as far as the town of Colindres, about 2½ miles from the entrance. Limpias is about a mile and a half further in than Colindres. Vessels of 11 to 13 ft. draught load here with grain and flour; those above 13 ft. draught complete their cargoes lower down, abreast the Tower of Treto. The port affords shelter and safety to vessels that frequent it. The anchorage is in 6 to 7 fathoms of water. Depth of water on the bar at high water, springs 34 ft.; neaps 26 ft. Steamers bound to Bilbao come here to take shelter. Captains should not anchor outside the bar at Fraile, as it is considered dangerous. Vessels drawing 16 ft. can enter at half tide.

Pilotage.—For vessels above 500 tons, 82 ptas. in and out.

The only expenses on vessels coming here for shelter are pilotage and clearance, from 120 to 150 ptas. for any sized vessel.

SEVILLE.

Seville, in lat. 37°27' N., long. 6°0' W., is on the river Guadalquivir, about 60 miles from the sea.

Population.—148,000.

Imports.—Coal, machinery, hides, timber, manures, hemp, flax, iron, crude petroleum, manufactured goods, and colonial produce.

Exports.—Iron ore, lead, copper, pyrites, quicksilver, olives, olive oil, cork, oranges, wine, cereals, wool, etc.

Accommodation.—The river is navigable as far as Seville for vessels drawing 21 ft. at spring tides, and 19 ft. at neap tides. Seville has 7,000 ft. of quayage with 25 ft. alongside at high, and 19 at low water, ordi-

Spain—Seville (*continued*).

nary spring tides. There are two hand cranes to lift 2 and 50 tons respectively; five steam cranes, three to lift 5 tons, and two to lift 10 tons. The quays are lit by electric light throughout the night. All vessels going to Seville are visited at Bonanza or Seville, according as the last port of call was foreign or Spanish, by the Custom House authorities. On arrival at San Lucar the master has to present at the Custom House, whether loaded or in ballast, a manifest of cargo and stores or provisions; also three copies in Spanish. After clearing at the Custom House, the officers go on board to search the vessel; this is called the "Fondeo" visit.

Vessels cannot perform quarantine at this port; they are sent to Vigo, Cadiz, or to Port Mahon, if they have come from an infected port, or with sickness on board; but vessels can perform three days' observation at Bonanza in time of epidemic.

Iron ore is shipped at the rate of 700 to 1,000 tons per day from Baird's and from Cala Mines, and 400 tons from other mines. Copper ore 200 tons per day.

Pilotage.—No vessel should attempt to enter without a pilot.

Pilotage tariff in the Guadalquivir river, from Bonanza to Seville, is payable on the ship's gross tonnage:—

		PILOTAGE.		Steamers and Vessels towed.	Sailing vessels
				Ptas.	Ptas.
Under 60 tons				45	50
From 61 to 80				48	53
" 81 " 100				50	56
" 101 " 125				52	58
" 126 " 150				54	60
" 151 " 175				55	63
" 176 " 200				56	64
" 201 " 250				58	68
" 251 " 300				60	71
" 301 " 350				63	74
" 351 " 400				65	77
" 401 " 450				68	82
" 451 " 500				72	86
" 501 " 600				78	90
" 601 " 700				82	98
" 701 " 800				86	110
Above 800 tons				95	125

Vessels going to Seville have to engage a river pilot from the captain of the port, through their agents.

Mooring Tariff:—Payable on the ship's gross tonnage:—

		Steamers.	Sailing vessels.
		Ptas. c.	Ptas. c.
From 50 to 60 tons		3 90	4 00
" 61 " 80 "		4 55	4 75
" 81 " 100 "		5 20	5 50
" 101 " 125 "		5 52	5 75
" 126 " 150 "		5 85	6 00
" 151 " 175 "		6 17	6 50
" 176 " 200 "		6 50	7 00
" 201 " 250 "		6 66	7 00
" 251 " 300 "		7 15	7 50
" 301 " 350 "		7 47	7 75
" 351 " 400 "		7 80	8 00
" 401 " 450 "		8 45	9 50
" 451 " 500 "		9 10	9 75
" 501 " 600 "		9 75	10 00
" 601 " 700 "		10 40	11 00
" 701 " 800 "		11 05	11 50
Above 800 tons		11 70	12 00

Steamers pay half the tariff rate on second mooring. Vessels re-

Spain—Seville (continued).

quiring to moor beyond the port limits pay double rates as far as Gelves, and from there to Huerta de la Compania four times the ordinary rate.

Port Charges.—Transport Tax.—See **Spain. Harbour Dues:**—

From European ports, coal and building materials, 50 c., and general cargo, 1 pta. 25 c. per 1,000 kilos. ; from America and other ports, for general cargo, 1 pta. 75 c. per 1,000 kilos. **Labourage** :—5 ptas. per day, and 1 pta. extra if they do not leave for dinner. **Clearance** :—Inwards, 75 ptas. ; outwards, 50 ptas. Inwards and outwards, with attendance, 125 to 150 ptas. **Stevedore's Charges** :—Oil, 1 pta. 50 c. per Imperial tun ; oranges, 1 pta. 25 c. ; cork wood, 2 ptas. ; tobacco, 1 pta. 25 c. per ton ; and other merchandise as per agreement. Discharging coal, 1 pta. ; coke, 1 pta. 25 c. ; pitch and creosote, 1 pta. 50 c. per 1,000 kilos. **Ballast** :—Sand, 1 pta. per ton ; stone, 3 ptas. per ton. Discharging ballast, 1 pta. per ton. **Tugs** :—San Lucar to Seville, and vice versa, fishing boats, 125 ptas. ; merchant vessels, up to 100 tons, 300 ptas. ; above 100 tons, 400 ptas. La Horecada to Seville, and vice versa, and San Lucar to La Horecada, and vice versa, fishing boats, 75 ptas. ; merchant vessels, up to 100 tons, 225 ptas. ; above 100 tons, 300 ptas. Notwithstanding the existence of the tariff the services of tugboats are usually secured at rates to be agreed upon.

Chaise hire up and down, to prevent unnecessary delay, the anchorage being a mile and a half from the town, 5 ptas.

Commission :—For entering and clearing at the Custom House, sailing vessels making out manifests and documents, advancing cash, and paying all expenses in dispatching vessels to Seville from Bonanza, with cargo, 47 ptas. ; in ballast, 23 ptas. 50 c.

In all charter-parties shipowners should state clearly transport duty on coal, coke, etc., payable by receivers of cargo, if not to be charged to the steamer ; indeed, they would be well advised to eliminate all ambiguous wording from their charter-parties and acquaint themselves with their exact conditions. The clause "all dues usually paid by the vessels" should be replaced by one which clearly defines each duty and charge which is payable by the ship.

Pro Forma Charges on a steamer discharging 2,000 tons of coal, and loading 2,000 tons of ore :—

	Ptas.	c.
Presenting manifest at Custom House	25	00
Pilotage from San Lucar to Seville	100	00
Shifting the vessel to berth (mooring)	11	70
Labourers for discharging inward cargo, 2,000 tons coal	2,000	00
Transport dues on inward cargo, 2,000 tons at 50 c. per 1,000 kilos.	1,000	00
Harbour dues, 2,000 tons at 50 c. per 1,000 kilos.	1,000	00
Custom House leave and stamps	25	00
Visits, 20 ptas. ; registry, 10 ptas.	30	00
Shifting the vessels to loading or discharging berth	11	70
Consul's fees	18	00
Pilotage down the river	95	00
Planks to gangway for loading and discharging	10	00
Bill of health	25	00
Clearance outwards and inwards, agency (attendance)	150	00
Stevedore's account (trimming)	60	00
Permit to work on holidays	50	00
Charges in San Lucar	400	00
Cash as per receipts, telegrams, and postages	25	00
Boat mooring and unmooring	15	00
Water, 20 ptas. ; gratuities, 35 ptas.	55	00
Loading dues out, ore 2,000 tons at 50 c. per 1,000 kilos.	1,000	00

Spain.

SITGES.

Sitges, in lat. $41^{\circ}16' N.$, long. $1^{\circ}47' E.$, is situated on the E. coast of Spain, about 3 miles from Villa Nueva y Geltru.

Accommodation.—It is exposed to all winds from W. by S. round by S. to E., and is therefore not safe during the winter season. Anchorage anywhere is in 5 or 6 fathoms off the town. Vessels should have a slip rope on the cable, so as to be able to proceed to sea at once should a heavy easterly gale set in.

For charges see **Villa Nueva y Geltru.**

TARRAGONA.

Tarragona, in lat. $41^{\circ}9' N.$, long. $1^{\circ}12' E.$, is about 56 miles W.S.W of Barcelona. Shortest sea route from Liverpool, 1,765 miles.

Population.—23,423.

Imports.—Spirits, coal, grain, staves, guano, fish, machinery, etc.

Exports.—Wines, nuts, almonds, and oil.

Accommodation.—The harbour is formed by moles, and affords protection to a large number of vessels. The depth at the entrance is $29\frac{1}{2}$ to $35\frac{1}{4}$ ft., and in the port $19\frac{1}{4}$ to 30 ft. Vessels are discharged by planks or lighters. There are no cranes, but some improvements are being carried out. Vessels can undergo a quarantine of observation (three days), but have to go to the lazaretto to undergo a full quarantine of 10 days.

Pilotage.—On showing the usual pilot signal a boat comes out with the pilot, who flies a blue flag with a white letter P on it. In bad weather a pilot stands at the end of the mole with the pilot flag, and indicates the direction in which the vessel ought to steer. When inside the port the mooring-boat indicates where the anchor should be dropped. The entrance is clear and deep between two mole heads, a pilot being really unnecessary, except to comply with the rules of the port. The tariff is as follows:—

Vessels of 80 to 100 tons, 5 ptas. ; 101 to 200, 8 ptas. ; 201 to 300, 10 ptas. 50 c. ; 301 to 400, 13 ptas. ; 401 to 500, 15 ptas. 50 c. ; 501 to 600, 18 ptas. ; 601 to 700, 20 ptas. ; 701 to 800, 21 ptas. 50 c. ; 801 to 900, 24 ptas. ; 901 to 1,000, 26 ptas. ; 1,001 to 1,200, 29 ptas. ; 1,201 to 1,500, 32 ptas. ; 1,501 to 2,000, for each 100 tons extra, 50 c. ; 2,001 to 3,000, for each 100 tons extra, 1 pta. ; 3,001 and upwards, for each 100 tons extra, 1 pta. 50 c. **Mooring:**—Vessels of 50 to 100 tons, total capacity, 5 ptas. ; 101 to 200, 10 ptas. ; 201 to 500, 12 ptas. 50 c. ; 501 to 1,000, 15 ptas. ; 1,001 to 1,500, 20 ptas. ; 1,501 tons upwards, for each 100 tons extra, 50 c.

NOTES.—(1) Payment for the boat and crew conveying the pilot is not included in the amount of the pilotage, each vessel paying 5 ptas. for this service. (2) Each vessel mooring alongside the moles shall, in addition to the mooring due, pay one quarter of same, and also one quarter for unmooring. (3) The mooring charge is compulsory for all vessels of over 50 tons total measurement. Vessels of under 50 tons requiring to moor alongside the mole shall pay 2 ptas. 50 c. for placing them in position, if the pilot's services are required for the purpose. (4) At night (between one hour after sunset and an hour before sunrise) the above charges are doubled. (5) Steamers entering or leaving under their own steam shall pay one quarter less than tariff rates for pilotage. (6) A vessel moored in the harbour and re-

Spain—Tarragona (continued).

quiring to shift its position shall pay for mooring as per tariff. (7) The following are exempt from taking pilots on entering and leaving : Spanish vessels under 80 tons ; Spanish coasting vessels of any tonnage ; Spanish liners running to European and African ports carrying certificated pilot.

Port Charges.—Transport Tax.—See **Spain. Port Dues** :—1 pta. 25 c. per 1,000 kilos. on all exports and imports. **Wharfage** (anchoring and making fast) :—Steamers or sailing vessels of from 50 to 1,500 tons, from 5 ptas. to 20 ptas., according to tonnage. Steamers or sailing vessels of 1,500 tons or over, 50 c. per 100 tons additional. **Stowage and Shifting Cargo** :—7 ptas. 50 c. per man per day ; 15 ptas. each foreman per day ; 1 pta. 50 c. per man per hour extra for night work. **Ballast** :—2 ptas. 50 c. per ton. **Boat Hire** :—5 ptas. per day.

Pro Forma Charges on a steamer discharging 1,500 tons of coal :—

	Ptas.	c.
Pilotage inwards and boat	31	88
Manifest inwards	20	00
Translation of manifest (official)	10	00
Health office	5	00
Customs documents and stamps	12	50
Entering and clearing	125	00
Customs gratuities	30	00
Customs visit	7	50
Discharging 1,500 tons at 1 pta. 25 c.	1,875	00
Customs dues at 30 c.	450	00
Port dues at 1 pta. 25 c.	1,875	00
Boatman, 7 days	35	00
Consular fees	20	00
Bill of health	7	50
Pilotage outwards	24	38
Customs certificate, provisions	7	50
Manifest outwards	12	50
Postage and petties	35	00

4,583 76 = £181 17s. 5d.

TINA MAYOR.

Tina Mayor, in lat. 43°24' N. long. 4°32' W., is on the N. coast of Spain.

Population.—About 300.

Exports.—Iron and timber.

Accommodation.—This port is accessible to vessels of 10 ft. draught, although those of 13 ft. draught can enter under favourable circumstances, but they lie aground at low water, on soft mud, about half a mile inside the entrance. Spring tides rise 11 ft. Vessels of 7 ft. draught can reach Bustio, on the W. side of the river Deva, about 1½ miles from its mouth.

No supplies can be had here. Fresh water can be obtained from the river.

Pro Forma Charges on a schooner of 86 reg. tons, ballast in, and cargo out :—

	Ptas.
Discharging 40 tons of ballast	50
Pilotage, in and out	150
Shifting ship	5
Pilot master	5

210 = £8 6s. 8d.

Spain.**TORRE DEL MAR.**

Torre del Mar, in lat. $36^{\circ}48'$ N., long. $4^{\circ}8'$ W., is 20 miles E. of Málaga.

Import.—Coal.

Accommodation.—This is an open roadstead. In fine weather 250 to 300 tons of coal are discharged daily, but easterly gales cause steamers long delays. Railway connection with Málaga and Velez Málaga.

TORREVIEJA.

Torrevieja is in lat. $37^{\circ}59'$ N., long. $0^{\circ}44'$ W.

Export.—Salt.

Accommodation.—This port is visited by sailing vessels and steamers up to 8,000 tons. Vessels anchor about half a mile from the shore in 5 to 7 fathoms, bottom of sand. The anchorage is sheltered from N., S., and W. winds.

Port Charges.—Vessels loading salt pay 9*d.* per ton loaded, which covers all port charges.

Pro Forma Charges on a vessel carrying 882 tons of coal :—

	Ptas.	c.
Pilot and mooring	52	00
Discharging dues	224	00
Discharging certificate	20	00
Loading permit and application	10	00
Manifest and copies	4	05
Stamps and policies	8	80
Consignment and agency	50	00
Labour, unloading 882 tons coal	1,102	50
Sanitary certificate	3	00
Shipwrecked mariners fund	5	00
Telegrams and postages	92	00
Tender and scraping	10	00
Provisions	105	00
Gratuities	180	00

1,866 35 = £74 1*s.* 10*d.*

VALENCIA.

Valencia is in lat. $39^{\circ}29'$ N.; long. $0^{\circ}23'$ W.

Population.—213,550.

Imports.—Coal, sulphate of ammonia, phosphate, guano, timber, iron, hemp, staves, and colonial produce.

Exports.—Green and dried fruit, wine, hides, and vegetables.

Accommodation.—The roadstead, distant about 2 miles from the town, gives commodious shelter to vessels drawing 23 ft. of water. Vessels drawing 23 ft. can enter the harbour and anchor alongside the wharves. With winds from the N.E. the entrance is difficult ; otherwise it is easy. On ordinary occasions ships with good ground tackle run no danger in the roads. The water area of the harbour is 170 acres, and the length of quayage 6,600 ft. The depth at the entrance is 27 ft., and there is no bar or tide. Vessels usually moor to the quayside stern on, and are loaded and discharged by lighters. This arrangement is followed to economize space. Sometimes, however, vessels are allowed to moor broadside on and to discharge direct on to the quays ; this course is nearly always followed with steamers loaded with coal and patent fuel. There are six steam cranes to lift $1\frac{1}{2}$ tons (or 40 tons per hour) each ; one hand crane to lift 1 ton (or 10 tons per hour) ; and

Spain—Valencia (continued).

one hand crane to lift 6 tons (or 20 tons per hour). Steady progress is being made with the harbour works, and a new lighthouse is being erected on the north mole. The whole of the quays have been paved with granite sets, and merchandise is thus less subject to damage in wet weather. A quarantine of observation can be performed here. Small repairs can be executed.

Pilotage and Mooring.—Compulsory, as under. Boat for anchors, 7 ptas. 50 c. to 20 ptas.

		Ptas.			Ptas.
From	1 to 80 tons, not compulsory—		From	501 to 600 tons	
	if pilot requested	10		601 " 700 "	22
"	81 " 100 tons	12	"	701 " 800 "	24
"	101 " 150 "	13	"	801 " 900 "	26
"	151 " 200 "	14	"	901 " 1,000 "	28
"	201 " 250 "	15	"	1,001 " 1,500 "	30
"	251 " 300 "	16	"	1,501 " 1,500 "	35
"	301 " 350 "	17	"	1,501 " 2,000 "	40
"	351 " 400 "	18	"	2,001 " 2,500 "	46
"	401 " 450 "	19	"	2,501 " 3,000 "	52
"	451 " 500 "	20	"	3,001 " 4,000 "	64

Beyond 4,000, increase 5 ptas. per each 500 tons or fraction thereof.

TARIFF FOR MOORING PILOT.

		Ptas. c.			Ptas. c.
From	1 to 50 tons, not compulsory—		From	501 to 600 tons	11 00
	if required	5 00	"	601 " 700 "	12 00
"	51 " 80 tons	5 00	"	701 " 800 "	13 00
"	81 " 100 "	6 00	"	801 " 900 "	14 00
"	101 " 150 "	6 50	"	901 " 1,000 "	15 00
"	151 " 200 "	7 00	"	1,001 " 1,500 "	17 50
"	201 " 250 "	7 50	"	1,501 " 2,000 "	20 00
"	251 " 300 "	8 00	"	2,001 " 2,500 "	23 00
"	301 " 350 "	8 50	"	2,501 " 3,000 "	26 00
"	351 " 400 "	9 00	"	3,001 " 3,500 "	29 00
"	401 " 450 "	9 50	"	3,501 " 4,000 "	32 00
"	451 " 500 "	10 00			

Beyond 4,000 tons, the mooring is 2 ptas. 50 c. for each 500 tons or fraction thereof.

The tariffs are reckoned on the total tonnage of the ships, according to the system "*Morson*."

N.B.—Double pilotage is charged on ships that enter or sail at night.

Port Charges.—Custom House Entry and Clearance Stamps:—

Three copies of manifest and translating manifest, 32 to 96 ptas. **Tonnage Dues.**—See **Spain**. **Labourage**:—Stevadore, 15 ptas. per day; overtime, 4 ptas. per hour; labourers, 7 ptas. 50 c. per day; overtime, 2 ptas. per hour. Sundays and holidays double rates, but overtime the same as ordinary days.

Discharging Coal:—1 pta. 20 c. to 1 pta. 50 c. per ton. **Gratuities**:—30 ptas. to 50 ptas., in the case of ordinary fruit steamers, other large steamers more, according to cargo discharged, etc. **Boat Hire, Cab Hire, Agency at Port, etc.**:—25 ptas. **Ballast**:—Sand, 3 ptas. per ton. **Water**:—Drinking, 2 to 4 ptas. per pipe; boiler, 1 to 2 ptas. per pipe.

Pro Forma Charges on a steamer of 2,300 reg. tons:—

Brokerage	Ptas.
Pilotage, in and out by day, and mooring	250
(Either operation by night, 46 ptas. extra)	115
Towage, unnecessary; if used for changing berth	60
Mooring ropes, etc. 20 ptas.; attendance each day, 4 ptas.	24
Gratuities (variable)	(about) 80
Customs documents	(about) 35

Spain.**VIGO.**

Vigo is in lat. 42°13' N., long. 8°42' W. The town is situated about 9 miles within the entrance of the bay. Shortest sea route from Liverpool, 735 miles.

Population.—About 25,000.

Imports.—Metals, coal, colonial produce, oil, etc.

Exports.—Wine, maize, preserved mussels, mineral waters, bacon, and cattle.

Accommodation.—The port has sufficient depth of water for all kinds of vessels. Vessels usually anchor off the town in from 9 to 6 fathoms of water on a mud bottom. Water and supplies are plentiful.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the Meteorological Observatory and dropped at noon local mean time, equal to 0 h. 34 m. 53 s. Greenwich mean time. Greenwich mean time can also be obtained at 10 a.m. at the Eastern Telegraph offices, by applying to the Superintendent 24 hours beforehand.

Pilotage.—Compulsory. Pilots will generally be found near the Bayona Islands. Rates as under.

For Entrance or Departure:—From the north entrance, between the point of Caballo de las Cies and Cabo del Hombre, and from the south entrance between the Islote Boecio and Estela del Oeste, to the port, or vice versa :—

From	50 to	250 tons	Ptas.
"	251 "	500 "	20
"	501 "	750 "	25
"	751 "	1,000 "	30
"	1,001 "	1,250 "	35
"	1,251 "	1,500 "	40
"	1,501 "	2,000 "	45
"	2,001 "	2,500 "	50
"	2,501 "	3,000 "	60
"	3,001 "	4,000 "	70
"	4,001 and over	"	80
			90

From the port to the lazaretto of San Simon, or vice versa :—

From	50 to	500 tons	Ptas.
"	501 "	1,000 "	20
"	1,001 "	1,500 "	25
"	1,501 "	2,000 "	30
"	2,001 "	2,500 "	35
"	2,501 "	3,000 "	40
"	3,001 and above	"	45
			50

To shift the position within the river from one point to another whatever may be the distance between them :—

From	50 to	500 tons	Ptas.
"	501 "	1,000 "	5
"	1,001 "	2,500 "	10
"	2,501 and above	"	15
			20

Mooring or unmooring at the moles :—

From	50 to	500 tons	Ptas.
"	501 "	1,000 "	5
"	1,001 "	2,500 "	10
"	2,501 and above	"	15
			20

Port Charges.—See **Spain.**

Spain.

VILLAGARCIA-CARRIL.

Villagarcia-Carril is in lat. $42^{\circ}35'$ N., long. $8^{\circ}46'$ W.

Population.—7,000.

Imports.—Cement, coal, hardware, hides, superphosphate of lime, paints, textiles, drugs, and fire bricks.

Exports.—Sardines, pit-props, tin and wolfram, wine, mineral waters, and cider.

Accommodation.—About 300 vessels can anchor safely in this port. There is a depth of 5 fathoms at high water, and of $3\frac{3}{4}$ fathoms at low water, lowest spring tides 3 fathoms; the bottom is of mud and sand. There are two piers, one 400 yards long, used for pleasure boats, the other, 100 yards long, is in connection with the railway, but only vessels drawing 16 ft. can go alongside.

Pilotage.—Compulsory. From the Island of Salvora, at mouth of the bay, to Villagarcia, vessels from 50 to 200 tons, 30 ptas.; 201 to 400, 35 ptas.; 401 to 600, 45 ptas.; 601 to 1,000, 55 ptas.; 1,001 to 3,000, 60 ptas.; 3,001 to 5,000, 65 ptas.; 5,001 to 7,000, 75 ptas. **Harbour Pilotage:**—Moving vessels, 70 to 200 tons, 5 ptas.; 201 to 400, 10 ptas.; 401 to 600, 15 ptas.; 601 to 1,000, 20 ptas.; 1,001 to 7,000, 30 ptas. Before sunrise and after sunset, the above rates are doubled.

Port Charges.—**Boat Hire:**—1 dol. per day. **Consular Fees:**—12s. 6d. **Sand Ballast:**—Gratis. **Loading Ballast:**—(By women) 1s. per day. **Labour:**—4 to 5 ptas. per day. **Brokerage:**—100 ptas. **Gratuities:**—Custom House, 25 ptas.; carabineers, 25 ptas.; sanitary authorities, 10 ptas.

Pro Forma Charges on a steamer of 2,386 tons with a cargo of coal in, and leaving in ballast:—

	Ptas.	c.
Pilotage in	60	00
„ out	60	00
„ shift at night	60	00
Consular fees	16	55
Bill of health	20	00
Custom House documents	7	10
Gratuities to Custom House	25	00
„ „ health office	10	00
„ „ carabineers	25	00
Telegram and letter	5	55
Boat hire ($5\frac{1}{2}$ days)	28	00
Commission and brokerage	100	00
	417	20 = £16 11s. 1d.

VILLAJUAN.

Villajuan is in lat. $42^{\circ}33'$ N., long. $8^{\circ}48'$ W.

Accommodation.—This is a fishing hamlet. No vessels ever call here, but British and foreign fleets and mail steamers visiting Arosa Bay and drawing over 20 ft. of water, anchor off this village, as there is plenty of water at all tides.

VILLA NUEVA Y GELTRU.

Villa Nueva y Geltru, in lat. $41^{\circ}15'$ N., long. $1^{\circ}41'$ E., is on a small cove, about 22 miles S.W. of Barcelona.

Spain—Villa Nueva y Geltru (*continued*).**Imports.**—Coal, cotton, and staves.**Exports.**—Wines and fruit.**Accommodation.**—The roadstead is quite open to southerly winds. Anchorage is in 4 to 5 fathoms inside the two buoys, and in case of a strong wind ships have plenty of room to go out to sea.

At night there is a red light F. on Cristobal Point, visible 9 miles.

There are several large cotton factories in the immediate neighbourhood, where coarse and fine cotton fabrics are produced. Coal is taken to the factories. Ballast is loaded into baskets and carried by men over a sandbank in the water to lighters, and then towed to the vessel.

Port Charges.—**Customs Dues** :—1s. 0½d. per ton of cargo. **Boat Hire** :—1s. 8d. each service. **Labourers** :—3s. 9d. to 5s. per day. **Water** :—4s. 2d. per barrel of about 150 gallons, delivered alongside the vessel.**VILLARICOS.**

Villaricos, in lat. 37°17' N., long. 1°46' W., is one of the Vice-Consular ports of Garruchá, and is under the same regulations as Palomares.

Imports.—Coal and coke.**Exports.**—Iron ore and silver lead.**Accommodation.**—The anchorage is off the town, in 5 to 14 fathoms, on good sand holding ground. Vessels are often detained here.

Expenses are the same as at Palomares.

VILLAVICIOSA.

Villaviciosa, in lat. 43°34' N., long. 5°25' W., is about 3 miles from the sea, on the E. side of an inlet.

Population.—1,200.**Imports.**—Grain, etc.**Exports.**—Filberts, chestnuts, and lime.**Accommodation.**—There is only 7 ft. on the bar at low water; tides rise 13 ft. Vessels of 9 ft. draught can go a mile up the inlet, and those of lighter draught to Espuncia, a loading place from whence merchandise is conveyed by carriage to the town of Villaviciosa.**Pilotage.**—In and out, £6.**Port Charges.**—**Town Dues** :—2½d. per ton. **Discharging Ballast** :—1s. 3d. per ton.**VIVERO.**

Vivero is in lat. 43°40' N., long. 7°35' W.

Population.—12,500.**Imports.**—Flax, hemp, tar, etc.**Exports.**—Iron ore, feldspar, sardines, etc.**Accommodation.**—The usual anchorage is in 5 fathoms on a clay bottom, lying E. and W. with two anchors out. The port is clean and deep, and safe to enter, but exposed to winds from the N. and N.W. Vessels often put in here for shelter during the winter months. The anchors ought to be

Spain—Vivero (*continued*).

sighted and cleared now and again, as they are liable to stick fast in the clay bottom, and break the cables. Vessels under 11 ft. draught can proceed at high water as far as the bridge at the town of Vivero. Large boats can get to Landrove Village, about 3 miles further up.

There are no docks or quays, but the Iron Ore Co., of Vivero, has facilities for the shipment of ore.

Pilotage.—Compulsory, 25 to 35 ptas.

Port Charges.—Loading Duties :—For imports, $1\frac{1}{2}$ ptas. per ton ; for exports, 1 pta. per ton. **Labour** :—2s. per day. **Water** :—Free. **Beef** :—4d. per lb. **Coal** :—30s. per ton.

BALEARIC ISLANDS.

The Balearic Islands, which rank for administrative purposes as a province of Spain, have a combined area of 1,935 square miles and a population of 311,649. The group consists of the islands of Majorca, Minorca, Iviza, Formentera, and Cabrera, all lying between latitudes $38^{\circ}40'$ and $40^{\circ}10' N.$, and longitudes $1^{\circ}20'$ and $4^{\circ}30' E.$ The imperial transport tax imposed on all loading and discharging operations at the island ports is the same as that in force in Spain, in addition to which there are certain local charges, details of which appear under the various ports. The currency and weights and measures are the same as those in use in Spain.

MAJORCA ISLAND.

ALCUDIA is in lat. $39^{\circ}51' N.$, long. $3^{\circ}10' E.$

Accommodation.—Alcudia Bay has a good anchorage in 3 to 4 fathoms of water, at a quarter to half a mile from the discharging pier. The town is situated on an inner bay, which can only be entered by very small vessels. There are no rocks or shoals in the bay, which is much used as a harbour of refuge in north-westerly and northerly gales. The English Land Company have the privilege of discharging vessels consigned to them here, the entry and clearance being effected at Palma.

Provisions can be obtained.

ANDRAIX is in lat. $39^{\circ}33' N.$, long. $2^{\circ}25' E.$

Population.—7,512.

Accommodation.—There is a depth of 5.75 metres (19 ft.) at low water, and 6.40 metres (21 ft.) at high water. The anchorage is good. A heavy sea sets in with W. or S.W. winds.

Pilotage.—Not compulsory. 20 c. per reg. ton for steamers and sailing vessels. **Mooring** :—3 c. per reg. ton.

Port Charges.—Clearance Fees :—75 c. per reg. ton. **Boat Hire** :—5 ptas. **Ballast** :—3 ptas. 75 c. per ton. **Labour** :—3 ptas. per day.

PALMA is in lat. $39^{\circ}35' N.$, long. $2^{\circ}40' E.$

Population.—63,940.

Imports.—Coal, timber, and petroleum.

Exports.—Almonds, apricot pulp, etc.

Spain—Majorca Island (continued).

Accommodation.—The Bay of Palma is protected from strong N.W. gales, but open to winds from S.W. to S.S.E. Vessels with good ground tackle and properly anchored do not run much danger from these gales, particularly if anchored in the western part of the bay. There is 30 fathoms of water at the mouth of the bay, and from 4 to 5 fathoms close to the breakwater forming the port. Vessels of average size can come inside the breakwater, which provides shelter in westerly gales.

The port has an area of $49\frac{1}{2}$ acres; width at entrance, 656 ft.; depth at the entrance, $27\frac{1}{2}$ ft.; length of quayage, 4,395 ft.; depth at the quayside varies from 4 ft. 11 in. to $27\frac{1}{2}$ ft. There are floating sheers to lift 50 tons, and a wharf crane to lift 1 ton.

Pilotage.—Compulsory. Vessels from 81 to 250 reg. tons, 7 ptas. 50 c.; from 251 to 1,000 tons, 3 c. per reg. ton; over 1,001 tons, 1 pta. for every additional 100 tons or part thereof.

Port Charges.—Local Dues :—

	Discharging. Ptas. c.	Loading. Ptas. c.
<i>1st Class Navigation</i> —		
Minerals, coal, coke, lime, cement, paving bricks, clay materials and cement for building construction, and manures	0 05	0 05
Common salt	0 25	0 25
Other goods and coin	0 30	0 30
<i>2nd Class Navigation</i> —		
Mineral ore, slag and iron pyrites	0 50	0 25
Other kinds of mineral ore	0 50	0 50
Coal and coke	0 25	0 25
Lime, cement, paving bricks and clay materials and cement for building construction	0 25	0 25
Pig iron	1 00	0 25
Lead in pigs and copper ore	1 00	0 50
Common salt	1 00	0 05
Manures	0 50	0 10
Cereals and wine	1 00	0 50
Other goods and coin	1 00	0 50
<i>3rd Class Navigation</i> —		
Mineral ore, slag and iron pyrites	0 50	0 10
Other kinds of mineral ore	1 00	0 50
Coal and coke	1 00	0 25
Lime, cement, paving bricks, clay materials and cement for building construction	0 25	0 25
Pig iron	1 00	0 25
Lead in pigs and copper ore	1 00	0 50
Common salt	1 00	0 50
Cereals and wine	2 00	1 00
Manures	0 50	0 10
Other goods and coin	2 00	1 50

Mooring :—Vessels from 51 to 80 tons, 3 ptas.; from 81 to 200 tons, 7 ptas.; from 201 to 400 tons, 10 ptas.; from 401 to 1,000 tons, 13 ptas.; over 1,001 tons, 50 c. for every additional 100 tons or part thereof. **Entrance Fees** :—50 ptas. **Clearance Fees** :—50 ptas. **Consular Fees** :—7s. 6d. **Ballast** :—1 pta. 75 c. per ton. **Labour** :—5 ptas. per man per day.

Brokerage :—150 ptas.

Pro Forma Charges on a steamer of 1,300 reg. tons, with a cargo of timber in, and ballast out :—

	Ptas. c.
Harbour dues at 2 ptas. per 1,000 kilos. (500,000 kilos.)	1,000 00
Brokerage	150 00
Pilotage in and out, mooring and unmooring, etc.	98 50
Boat hire	15 00

Carried forward 1,263 50

Spain—Majorca Island (*continued*).

	Ptas.	c.
Brought forward.	1,263	50
Discharging	749	00
Transport dues.	2,500	00
Clearance in and out.	100	00
Consular fees	13	75

4,626 25 = £183 10s. 11d.

POLLENZA is in lat. 39°53' N., long. 3°3' E.

Accommodation.—Pollenza Bay is exposed to heavy squalls of wind from the N.W. and N., which blow down from the surrounding hills. N.E. winds also blow hard in this bay, raising a considerable sea. There is anchorage in 6 or 8 fathoms, however, for a few large vessels, to the W. of the point on which Pollenza Castle is situated.

PORRASSA COVE, in Palma Bay, is protected from all winds but those from S.E. and S., which render it very dangerous.

PORTO COLON, in lat. 39°26' N., long. 3°14' E., has deep water at the entrance, where all large vessels anchor, but shoals inside. There is a good deal of sea at the entrance in S.W., S., and S.E., winds.

PORTO PETRA harbour has 6 fathoms of water at the entrance. Large vessels can anchor in a creek on the E. side of the harbour in 5 to 6 fathoms. It is a dangerous port in bad weather, owing to the narrow entrance and being exposed to gales from the S. and S.E.

PORTOPI, or PORTO PI, situated in Palma Bay, can only be entered by boats.

SOLLER is in lat. 39°47' N., long. 2°41' E.

Accommodation.—The harbour opens towards the N.W. and N., and, although there is plenty of water, such a heavy sea sets in when those winds blow with any strength as to place all vessels in great danger.

MINORCA ISLAND.

MAHON is in lat. 39°52' N., long. 4°13' E.

Population.—16,000.

Exports.—Barley, brandy, cheese, honey, wax, dried fruits, iron, cattle, wheat, etc.

Accommodation.—Mahon harbour is capable of affording shelter to an unlimited number of vessels of any size, being 14 miles long and from 40 to 60 ft. deep. There is 6,562 ft. of quayage, with from 20 to 25 ft. alongside.

Ships can now perform a quarantine of observation (three days) at this port, and also complete quarantine, it being the chief quarantine port of Spain.

It is an important port of refuge for vessels needing repairs. Every facility exists for repairs, and skilled labour can be obtained on reasonable terms.

There is a self-docking pontoon dock, 450 ft. long, 85 ft. wide at the entrance, 31½ ft. on the sill, lifting power 13,000 tons. There is a patent slip to lift 900 tons.

The situation of the buoys marking the shoals at the entrance of Port Mahon are as follows :—

The buoy marking the shoal of Cape Mola lies to the south of the point

Spain—Minorca Island (*continued*).

of this shoal, 20° W. ; distance from the same 75 fathoms, in 12 fathoms water.

The shoal of St. Phillipet has its buoy at the west of its point ; distance from the same 25 fathoms, in 6 fathoms water.

The shoal named Den Moro has its buoy at the extremity of the said shoal ; distance from the land 40 fathoms, and 7½ fathoms deep.

Mooring Buoys :—The mooring buoy at the north part of the port is situated south-east of the buoy of Cape Mola ; distance from this buoy 65 fathoms. The mooring buoy at the south part of the port is situated east of the point of St. Charles ; distance from the said point 100 fathoms.

Pilotage.—

	Ptas.
From 401 tons upwards	40
„ 301 to 400 tons	35
„ 201 „ 300 „	30
„ 101 „ 200 „	25
Up to 100 „	20

Port Charges.—Vessels discharging pay 2 ptas. 50 c. per ton. Vessels entering for shelter or repairs, or in ballast, are free of tonnage dues. For other charges, see **Spain**.

FORNELLS is in lat. 40°4' N., long. 4°4' E.

Accommodation.—Fornells is an excellent harbour of refuge, being sheltered from all winds. The entrance is narrow, but there is 17 to 20 fathoms of water inside, and no shoals or reefs of any kind. Large vessels generally anchor in 8 to 12 fathoms off the castle and tower.

CIUADELA, in lat. 40°1' N., long. 3°50' E., is a small and bad harbour on the W. coast. Population, 8,500.

IVIZA ISLAND.

Iviza or Ivica Island possesses one of the finest harbours in the group. It is only open to foreign import trade for corn, grain, timber, pitch, etc.

SWEDEN.

The kingdom of Sweden occupies the eastern part of the Scandinavian peninsula. It has a total area of 172,876 square miles, with a population of 5,379,209. The executive power is in the hands of the King, who acts under the advice of a Council of State, the legislative authority being vested in the Diet acting in concert with the Sovereign.

Commerce.—The “most favoured nation” treatment between the United Kingdom and Sweden is secured by a treaty of Peace and Commerce between the two countries. Customs duties are imposed by weight, according to a fixed schedule, the free list including certain raw materials, railway construction and maintenance plant, metals, chemicals, etc. Goods in transit to Norway pass in bond through Sweden, and vice versa. The value of the imports in 1907 was 676,786,000 kr. = £37,599,222, and the exports 510,195,000 kr. = £28,344,166.

Mercantile Marine.—The commercial marine of Sweden on December 31, 1907, had a total net tonnage of 768,318, consisting of 1,144 steamers of 535,318 tons net, and 1,761 sailing vessels of 233,000 tons net.

Internal Communications.—The means of communication are excellent in parts, and everywhere good. A network of roads extends over the whole country. The admirable natural waterways have been improved by the construction of canals, of which the most important is the system between the Kattegat and the Baltic, including the Trollhätta and Göta canals, and the great lakes. Steamer communication is kept up on the internal waterways and along the coast during the open part of the year. The railway system consists of about 8,237 miles, of which 2,695 miles are the property of the State, the remaining 5,542 miles being owned and worked by private companies. The majority of these lines have a gauge of 4 ft. 8½ in. Post, telephone, and telegraph systems are all highly developed.

Currency, Weights and Measures.—The monetary system is based upon a gold standard, the three kingdoms of Sweden, Norway, and Denmark having, by treaties signed in 1873 and 1875, adopted the same system. The krona of 100 ore = 1s. 1.33d., or about 18 kroner to the £1. Notes of the National Bank for 5, 10, 50, 100, and 1,000 kroner are legal tender, the Bank being bound to exchange them for gold on presentation. The metric system of weights and measures was adopted by law in 1875, and has been in use since 1883.

Port Dues.—The following dues are paid at all Swedish ports alike :—
Tonnage Dues.—10 ore per reg. ton inwards and the same outwards. If the vessel makes several voyages to Sweden in the same calendar year, arriving in ballast and leaving with cargo, she pays this charge only the first voyage ; but if she arrives with cargo that has to be discharged, she has to pay each voyage, but outwards only once a year.

Light and Beaconage Dues.—25 ore per ton inwards, and the same outwards. A steamer which has paid light and beaconage dues on eight occasions, or a sailing vessel which has paid on four occasions, during one

Sweden.

calendar year, is exempt from this charge for any subsequent voyage during the same year.

Harbour Dues.—On the east coast of Sweden half harbour dues only are levied on vessels when the amount of cargo shipped or discharged does not exceed the half of the total carrying capacity of the vessel.

Shipping Office Dues.—3 ore per ton.

When a vessel discharges or loads at several ports, these three charges are generally paid at the first port.

Manifest of cargo and stores must be prepared by captains before coming within Swedish territorial waters.

Measurement Charges.—British registers are in part recognized by the Swedish Government, but a new principle of measurement having been adopted, it is sometimes necessary that steamers be re-measured. At such times the charge is only made for the space actually re-measured. The certificate of measurement costs : The measurer, 20 ore per net reg. ton ; fee with stamp and extras, 30 kr.=£1 13s. 4d.

Pilotage.—Pilotage is compulsory in and out of all Swedish ports. The charge is based on the distance in latitude minutes over which the pilotage extends, and according to the tariff contained in the Schedule to the Pilotage Tariff Act of 1897. This tariff, which the pilot is by law bound to carry and produce for inspection by the ship master, if so required, varies considerably in the case of various ports and the season of the year when the service is rendered. Thus, in the case of a steamer of 2,000 net reg. tons, piloted 71 to 75 latitude minutes, the charge to a favourable port, presenting few difficulties, during the summer months would be 107 kr. ; on the same steamer, piloted the same distance, to a difficult port the charge in winter would be 268 kr. Shipmasters are, however, often able to make agreements for pilotage at rates considerably below those provided for by the Government schedule.

Stevedoring.—The following is the text of an agreement which has been entered into between the Shipowners' Association of Sweden (the Sveriges Redareförening) and the North of Sweden Federation of Stevedores.

1. The Federation binds itself to undertake the discharging and loading of ships belonging to or time-chartered by members of the Association at the following prices :—

Kr. ore.		Kr. ore.	
Deals, 3 x 8 and upwards	2 00 per St. Pbg. Std.	Boards, under 1 inch and under 4 inches broad, not bundled	4 40 per St. Pbg. Std.
Battens, 2½ x 6½ and upwards	2 00 „ „	Floorings in bundles	2 50 „ „
Battens, 2 x 4½ and upwards	2 30 „ „	„ 1 x 7 and upwards, not bundled	2 75 „ „
Slating battens, scantlings and 2 x 4	2 50 „ „	Floorings, 1 x 4 and upwards, not bundled	2 90 „ „
Sawn spars and square battens	2 50 „ „	Floorings under 1 inch not bundled	3 90 „ „
Boards, 1 x 7 and upwards	2 50 „ „	Staves, not bundled	5 00 „ „
Boards, 1 x 4 and upwards to 7	2 85 „ „	„ and box boards in bundles	2 85 „ „
Boards under 1 inch, 4 inches broad and upwards	3 75 „ „	Firewood, deals and batten ends	3 75 per cubic fathom
Boards, 1 inch and under 4 in. broad, not bundled	4 00 „ „	Firewood, board ends „ under 1 ft.	4 75 „ „
			6 00 „ „

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Kr. ore.		Kr. ore.	
Pit-props, large, rafts for ships a/c (180 c. ft.)	2 50 per Gothenb. Std.	Spars and barks under deck (150 c. ft.) . .	4 50 per St. Pbg. Std.
Pit-props, small, 4 in. or less in diam., or 6 ft. or less in length, rafts for ships a/c (180 c. ft.)	2 75 " "	Round spars and poles on deck (120 c. ft.)	3 75 " "
Egyptian spars	2 60 per St. Pbg. Std.	Round spars under deck (120 c. ft.) . .	4 50 " "
Spars and barks on deck (150 c. ft.)	3 75 " "	Dutch timber	2 90 per tult.
		Wood pulp, wet.	0 60 per ton.
		Wood pulp, dry.	0 70 " "
		Iron	0 85 " "
		Coal, discharging	0 75 " "
		Coke and sulphur	1 05 " "

(a) For cargo passed by hand on board over deck, 25 ore extra per standard to be paid.

(b) Steamer to find steam, winches, winchmen, gear, etc.

(c) The cost of transporting labourers to be borne by the ship, but specified accounts to be produced and signed by the captain.

(d) Above prices to be increased by 10 per cent. for loading and discharging steamers after November 1 within all places from Skutskär to Örnsköldsvik, and north of same from October 1.

(e) For ships not bound through charter-party to shippers' stevedore, the prices for loading of pit-props and Egyptian spars will be reduced by 25 ore per standard.

(f) Every stevedore is compelled to insure his workmen according to the Swedish law, and has the right to charge every ship 2 per cent. on the cost of loading ^{and} or discharging, except the expenses for transporting labourers, overtime, and waiting-money. (The Association, however, has the right itself in the future to undertake the insurance of labourers employed on board ships belonging to its members.)

(g) Regular working time to be from 6 a.m. to 6 p.m. with two hours rest.

(h) Overtime to be paid as customary in the respective ports, but not above 30 ore per hour per man up till 8 p.m.; when working after 8 p.m. and on Sundays and holidays, 60 öre to be paid per man and per hour extra. (Söderhamns district excepted).

(i) Waiting-time to be paid at the rate of 25 ore per hour and per man.

By "waiting-time" is meant such stoppage of the loading caused by the shipper not delivering cargo according to charter-party, and also such time during which a stevedore, as ordered by the owner, captain, or their agent, has to keep his men waiting for a steamer not arriving at the time stipulated beforehand.

(j) Discharging of coal at Lulea to be paid after special agreement, but not at a higher price than stipulated above.

(2) The Federation binds itself to supply, if possible:—(a) A sufficient number of sober and able workmen for the execution of a good and quick stevedoring, a preference to be given those vessels to which this contract applies.

(b) For detention, caused by neglect of the stevedores through not fulfilling the stipulations in the above part of this paragraph, the ship is to be indemnified by the respective stevedore. In order to obtain such indemnity the ship's master has immediately to report his complaints to his owner, who within a fortnight after the reception thereof has to submit his claims to the Federation. If the parties cannot agree on the amount of the com-

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pensation, the question has to be settled as stipulated below in paragraph 15.

(c) Should, however, any delay of the ship be caused by rain, storm, short delivery of cargo, strike, boycotting, or neglect by the owner, or master through not having informed the stevedore of the sailing from last port, the stevedore is not liable to indemnity.

(d) The ship has the full right of choosing its stevedore amongst those named on the list of stevedores joining the Federation in the respective loading districts.

3. At the request of the captain the stevedore, if possible, has to execute overtime and nightwork.

4. On May 1, June 23 (Midsummer-eve), the day before Whit-Sunday, Christmas Day, and New Year's Day, the stevedores are compelled to work up to midday only, except on those ships which can be finished during the afternoon.

5. Contracts made by shipowners with other stevedores (not being members of the federation) than here named, before January 25, to remain in force even if conditions or prices differ from the above.

6. Vessels meeting with strike or lockout have to act in accordance both with the Association and the Federation. Ships bound through charter-party to shippers or charterers' stevedores for loading pit-props, Egyptian spars, or juffers are included in this contract.

7. Strike or lockout may not be declared by either party during the time of this contract. However, if any employers' association, which either of these parties may join, should declare lockout, this contract is not to be in any way altered.

8. The Federation binds itself not to make any agreement, private or collective, with its labourers, where it is not clearly stipulated that the employer shall have the right of engaging and discharging his workmen, leading and distributing the work, and to use labourers belonging to or not belonging to any union.

9. The Federation binds itself to seek the membership of the Swedish Employers' Association before February 29, 1908. (*They joined on February 10, 1908.—Ed. "Dues and Charges."*)

10. This contract to be in force not only for ships belonging to or time chartered by members of the Association, but also for foreign ships, which the Association declares shall have the benefit thereof.

11. The Association binds itself in case of strike of the workmen of one or more of the members of the Federation, or if boycotted by the labourers' Union, to support such a stevedore, and the members of the Association are under no circumstances to employ any stevedore competing with the Federation, at the risk of being fined according to the decision of the arbitrators. The Association hereby binds itself to strictly apply its rules against any member who breaks this agreement.

12. This contract to be valid from this day until December 31, 1910, when it will cease, if notice to that effect has been previously given; should the contract not have been cancelled before that date it will be prolonged from year to year, and to the end of that year in which notice for its termination shall have been received.

13. The Federation binds itself, in case of conflict between one or more of its members on one side, and their workmen or their men's Union on the other side, in every way to support such members, and at the request of the

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stevedores or vessels in question to send labourers from those districts which are not engaged in a conflict. The expenses thereby incurred to be borne by the parties asking for such assistance.

14. Should a satisfactory agreement with the Swedish Transport Labourers' Union regarding freedom of labour not be arrived at, and should the men's Union declare strike or boycotting against the members of either the Association or the Federation, the Association to take steps to establish its own stevedoring companies at those places in the North of Sweden where the Union has been working on co-operative principles, and these companies shall immediately join the Federation.

15. If complaints are brought forward from members of the Association or Federation concerning matters which this contract is supposed to provide for, or if any dispute arises relating to the construction and application of same, and an agreement cannot be arrived at, such dispute shall be referred to five arbitrators, of whom each party nominates two. In case these four arbitrators cannot agree about the fifth arbitrator, the latter to be nominated by the Governor of the province in which the dispute has arisen."

Gefle, *January 25, 1908.*

Emigration.—No person is allowed to act as an emigration agent without first obtaining a permit. Such permits are only granted to Swedish subjects resident in Sweden who are known to be well conducted and otherwise suitable. Security must in every case be given for from 2,000 to 6,000 kr., and if the engagements entered into provide for the conveyance of the emigrant beyond the first port abroad the amount must not be less than 20,000 kr. Emigration agents will be responsible for the actions of any assistant whom they may employ. Every emigrant is to be provided with a copy of the contract in duplicate; one of these will be kept by the agent.

The contract, which must be in Swedish with an English translation, shall in addition to the emigrant's name and address give full particulars as to :—

1. The Swedish place from which, the harbour abroad to which, and if necessary the place beyond to which the emigrant is to be forwarded, and, if not proceeding direct by ship, the European ports through which the emigrant is to pass, and the means of transport to be used.

2. The day fixed for departure from Sweden.

3. The vessel by which the emigrant is to be conveyed abroad, or, at least, whether sailer or steamer, and the place on the vessel to be assigned to the emigrant, and, if the emigrant is to be conveyed beyond the port abroad, the means of conveyance by which the journey is to be effected.

4. The time (if transit to the place abroad does not take place immediately) that the emigrant may have to wait at intermediate places, and how he is to be boarded and lodged.

5. The payment for the whole journey effected or to be effected by the emigrant, including landing expenses abroad, expressly stating that the emigrant's keep en route, as well as the conveyance and charge of his effects, is included.

6. What the emigrant has to do in the event of complaint arising as to non-fulfilment of contract.

7. Special conditions which may be arranged.

Under no circumstances may the charges for the conveyance of the emigrant be worked off after arrival at the port of destination. Emigrants must

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not be dispatched abroad before the contract and the emigration certificate have been viséd by the police authorities. If, owing to any circumstance, the date of departure is delayed, the agent must board and lodge the emigrant, or provide means for the same, in which latter case this must be noted on the contract. In the case of any emigrant who should be taken ill prior to the sailing of the vessel, the full fare must be returned to him, less a *pro rata* amount to cover the cost of any board and lodging which he may have received. It is the duty of the emigration agent to provide for the emigrant's board and lodging at all intermediate places at which he may be detained; should he fail in this respect, the nearest consul will provide for same, and the case will be settled either by arbitration or before the ordinary legal tribunals. If the emigrant is rejected in the port of destination the consul will return him home, and the amount of the cost of same will fall upon the agent. The agent's security will not be refunded until two years after the date at which he ceases to engage accommodation for emigrants. It is always provided that these regulations do not apply to ship-owners in which the number of passengers does not exceed thirty.

The captain of a foreign vessel conveying emigrants must prove by reliable evidence that he is suitable for such command. Emigrant ships shall be inspected by three experts to ascertain whether they are suitable for the purpose, properly equipped, sufficiently manned, provided with the necessary boat, life saving and fire extinguishing apparatus, also how far provisions respecting provisions and water supply are observed, etc. The charge for such examination is 15 kr., plus 8 öre per ton of the ship's tonnage. If the report of the examination is objected to by the owner, an appeal can be made and a fresh examination take place. No vessel may take more emigrants than 5 adults per 10 tons of the vessel's measurement.

Every emigrant ship shall have a deck for the occupation of the emigrants in the open air, properly protected by bulwarks, allowing not less than 0.5 square metre for each emigrant.

Space.—Each emigrant must have in the quarters assigned to him the following space :

1. On steamers,—

(a) In the space directly under the main deck or any place above same, 2.83 cubic metre.

(b) In the second deck below the main deck, 3.40 cubic metres.

It is forbidden to convey emigrants in any other but the two aforesaid decks.

2. On sailers, emigrants may only be accommodated on the deck immediately below the main deck, or in erections above same, being allowed 3.11 cubic metres.

3. Children under one year are not counted, and two children under eight years of age are reckoned equal to one person above that age.

Emigrant ships shall contain a sufficient number of berths consecutively numbered. These berths shall be 1.83 metres in length and 61 cm. wide, and double the width if intended for two persons. More than two berths, one over the other, may not be placed between two decks; tiers of berths must not be placed nearer each other than so as to allow a passage of at least 61 cm. between them. The bottom of the lowest berth shall be at least 24 cm. from the floor; between the bottoms of the lower and upper berths, and between the latter and the ceiling, there shall be at least 76 cm., and the

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height between the floor and ceiling shall be at least 1·83 metres. In the space occupied by emigrants no other goods may be stowed besides the emigrants' effects required on the voyage. A berth for two persons may be assigned to a man and wife, or two persons of the same sex, or to a parent and two children under 8. Berths shall be arranged lengthwise as to the ship; those for male emigrants of 14 and upwards shall be in a separate cabin, and there shall be a separate cabin for women. Members of the same family must not be separated without their consent, and man and wife may have a closed cabin even in the part of the ship set apart for women. There must be at least two w.c.s for emigrants, and in addition one w.c. for every 100 male emigrants, and one w.c. for every fifty female emigrants; w.c.s shall be separated from any other space occupied by passengers, and be arranged so as to be easily kept clean.

Each sleeping place shall be provided with ventilators at least 1·83 m. above the main deck. These shall be so arranged that at least 18 sq. cm. of the total section of the ventilating shafts or tubes is allowed for every five persons. In the event of ventilation from the side of the ship not being available, at least 26·5 sq. cm. of the total section must be allowed for every five emigrants.

The space occupied by emigrants must be provided with skylights, so arranged that they may, weather permitting, be removed, or at least opened. For each 100 emigrants there shall be at least one hatchway with staircase.

Provisions :—Provisions and water supply must be calculated so as to be sufficient for the length of the voyage under the most unfavourable conditions for all the emigrants that the ship can take, or for the lesser number that the captain proposes to carry. Such supply must be for each day and emigrant at least 425 grams of dry ship's bread, 21 grams of salt, and 5 litres of drinking and cooking water, and for three days per week 212 grams of salt pork, and for four days a week 425 grams of salt meat per day. Provisions must be of good quality and kept mainly below deck.

There shall be a separate kitchen for cooking emigrants' food, sufficient for each meal being prepared for all of them at once, and there shall be sufficient fuel and utensils provided.

Hospital Accommodation :—There shall be infirmaries for men and women not lower than the first deck under the main deck, allowing at least 1·67 sq. m. for each five emigrants. Ships conveying over fifty emigrants shall carry, at the cost of the owner, a doctor who has already been at sea. The emigrant ship shall be provided with the necessary infirmary articles, calculated on the basis of 5 per cent. of the number of emigrants, together with serviceable medicines. The doctor appointed must see that the regulations are complied with three days before the departure, and also ascertain that none of the emigrants or crew are suffering from illness endangering the health of others, all of which the doctor must certify. If there is no special doctor appointed, the town doctor must act in this matter.

General Regulations :—Before the vessel's departure the Police Authorities must be supplied with a duplicate list of the emigrants' names, place of birth, sex, age, occupation, and place of destination. One copy of this will be returned to the captain duly viséd.

Should an emigrant die on the voyage, or for any reason be landed at any other port than that of destination, the captain must note on the list the cause of death or the circumstances causing the landing. If a doctor

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is on board, he shall certify the cause of death, which shall be countersigned by the captain.

If after the emigrants go on board the departure of the vessel should be delayed for eight days, and meanwhile a part of the provisions and water for the voyage has been used, the deficiency shall be made up.

When the emigrant ship is ready to sail, the captain shall advise the authorities and obtain inspection. A written statement shall be drawn up that there is no hindrance to the clearing of the ship.

On the voyage to the place of destination, passengers may not be taken on board unless at the Swedish port of departure the authorities are advised thereof. Such advice shall also mention the port or ports abroad in Europe which are to be called at, also the maximum number of passengers to be taken on board; the vessel must not stay more than ten days altogether at such port or ports unless compelled by *force majeure*. The vessel which calls at an intermediate port shall carry a person appointed by the authorities, who shall see that not more passengers are taken than indicated, and that the maximum number is not exceeded, and that the regulations re emigrants' accommodation are adhered to. He shall stay on board until a list of the emigrants from the foreign port is made up in duplicate. If the emigrant ship stays longer than eight days in a foreign port, the Swedish Consul shall be advised, so that he may see that the supply of provisions and water, etc., has been replaced.

On the arrival of the vessel at the place of destination, the captain must advise the Swedish Consul, handing him the signed list of emigrants, together with the list of emigrants taken on board at any foreign port. The Consul shall ascertain whether all are present, and, if any are missing, investigate whether the assigned cause is in accordance with facts.

At least one copy of the Emigration Regulations shall be posted in a conspicuous place in the emigrants' saloon.

Emigrant ships must not carry gunpowder or explosives, matches, or other goods of a dangerous or unwholesome character. If horses, cattle, or animals are carried, they must not be accommodated on a deck underneath one where emigrants are quartered, nor on the same deck, excepting on iron vessels with watertight compartments extending to the upper deck.

AHUS.

Ahus is in lat. 55°56' N., long. 14°19' E.

Population.—3,800.

Imports.—Coal, grain, manure, and oilcakes.

Exports.—Granite and paper.

Accommodation.—There are no tides here. The average depth of water at the entrance is 19 ft., and in the harbour 17 ft. The length of the New Quay is 2,260 ft., with a depth alongside of 17½ ft. The length of the Old Quay is 1,150 ft., with a depth alongside of 12 ft. There are 4 cranes capable of lifting up to 12 tons. A new crane with a lifting capacity of 25 tons is now under construction.

Pilotage.—Compulsory for vessels from or to foreign ports (10 times a year). Rates according to tariff.

Port Charges.—Wharfrage Dues:—Vessels to or from foreign

Sweden—Ahus (*continued*).

ports, 12 ore per net reg. ton; vessels to or from Swedish ports, 9 ore per reg. ton. **Lastage Dues** :—10 ore per reg. ton. **Towage** :—According to tariff. **Boat Hire** :—Usually £1 in and out. **Consular Fees** :—2s. 6d. **Light Dues** :—25 ore per ton in, and the same out. **Ballast** :—1 kr. per ton f.o.b. **Brokerage** :—3 to 5 per cent.

BRANNFORS.

Brannfors is one of the outports of Luleå, which is in lat. 65°35' N., long. 22°8' E.

Population.—800.

Accommodation.—There is a depth at high water of 24 ft., at low water of 22 ft., and at lowest spring tide of 21 ft.

Pilotage.—Compulsory.

Port Charges.—**Harbour Dues** :—12 ore per reg. ton. **Towage** :—About £5 to £6 in and out. **Consular Fees** :—2s. 6d. **Boat Hire** :—£1. **Labour** :—According to agreement; stowing, 2 kr. 50 ore per standard.

Pro Forma Charges on a steamer of 800 reg. tons, with a cargo of wood out, drawing 20 ft. loaded:—

	Kr.	ore.
Harbour dues, at 12 ore per reg. ton	96	00
Brokerage	100	00
Pilotage, in and out	90	00
Towage	100	00
Boat hire	18	00
Other charges	20	00
Custom House bill, tonnage dues, lighthouse dues, and shipping office dues	584	00
	1,008	00 = £56 0s. 0d.

BURGSVIK.

Burgsvik is in lat. 57°2' N., long. 18°15' E.

Population.—1,000.

Imports.—General merchandise.

Exports.—Grain and stone.

Accommodation.—There is a depth of 17 to 18½ ft. in the outer roadstead, and of 12 ft. in the inner. There are no spring tides. A railroad connecting Burgsvik with Wisby is now open.

Pilotage.—Compulsory for vessels of over 40 reg. tons coming from foreign ports.

Port Charges.—**Harbour Dues** :—10 ore per reg. ton in, and the same out. **Mooring** :—5 kr. per vessel. **Boat Hire** :—5 kr. per day. **Labour** :—4 kr. per day. **Light Dues** :—Same as other Swedish ports.

CARLSHAMN.

Carlshamn is in lat. 56°11' N., long. 14°52' E.

Population.—About 8,000.

Imports.—Steam coal, coke, salt, grain, cotton, tobacco, oilcake, and petroleum.

Sweden—Carlshamn (*continued*).

Exports.—Stones for building, timber (all kinds), pitch, tar, bark, wood-pulp, oats, granite, salmon, butter, and cheese.

Accommodation.—The harbour is commodious and safe, and is protected by some small islands and a breakwater. The harbour is generally open all the year round. The water area is $56\frac{1}{2}$ acres; length, 2,624 ft.; width 1,312 ft., depth, 21 to 27 ft.; quays on the east side, 1,900 ft.; quays on the west side, 1,800 ft.; depth alongside the east quay, 13 to 16 ft.; depth alongside the west quay, 18 ft. Cranes to lift 2 to 10 tons on the east quay, crane to lift 20 tons on the west quay. The anchorage is good. A petroleum dépôt has been built in the harbour basin; 27 ft. of water available for petroleum steamers. There is a pier, 270 ft. long and 70 ft. wide, running out from the west quay with a depth alongside of from 21 to 27 ft.

There is a patent slip with a lifting power of 200 tons.

Pilotage.—Pilots can always be obtained at Hano, an island about 10 miles S. of Carlshamn, or at Terno. Harbour pilot, 2 to 5 kr.

Port Charges.—Steam-tug :—As per agreement, from 20 to 30 kr. for a vessel of 500 tons. **Ballast :**—Sand, 1 kr.; stone, 1 kr. 50 ore per ton. **Stevedore :**—Loading or discharging, 50 to 60 ore per ton. **Discharging Ballast :**—50 ore per ton. This is for taking it away from the side; if men are wanted in the hold extra charge is made. **Mooring :**—2 to 5 kr.

Pro Forma Charges on a vessel of 300 tons from England with coal, and loaded outwards with a cargo of deals :—

Pilotage inwards (winter, 19 kr.)	Kr. ore.
" outwards (winter, 19 kr.)	16 00
Tonnage dues, inwards, 10 ore	30 00
" outwards, 10 "	30 00
Light " inwards, 25 "	75 00
" outwards, 25 "	75 00
Harbour " inwards, 12 "	36 00
" outwards, 12 "	36 00
Board of Trade	10 00
Stamps	1 00
Harbour pilot	3 00
Clearing, in and out	40 00

368 00 = £20 8s. 11d.

Pro Forma Charges on a steamer of 800 tons from Newcastle with 1,500 tons of coal in, and loaded out, for England, with 1,200 tons of wood-pulp :—

Pilot inwards (winter, 34 kr.)	Kr. ore.
" outwards (winter, 34 kr.)	28 00
Tonnage inwards, 10 ore	80 00
" outwards, 10 "	80 00
Light dues inwards, 25 ore	200 00
" outwards, 25 "	200 00
Harbour dues inwards, 12 ore	96 00
" outwards, 12 "	96 00
Board of Trade, 3 ore	24 00
Stamps	1 00
Harbour pilot and mooring	10 00
Discharge of coal, 65 ore per ton	975 00
Stevedore, 60 ore per ton	720 00
Brokerage, in and out	75 00

2,613 00 = £145 3s. 4d.

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ENGELHOLM.

Engelholm, in lat. $56^{\circ}17' N.$, long. $12^{\circ}50' E.$, is situated at the head of Skelder Bay, about 16 miles N. of Helsingborg.

Population.—4,000.

Accommodation.—The harbour is only available for vessels of 5 to 6 ft. draught ; those above that load in the roads, where they are quite exposed to westerly winds. There is very little shipping carried on at this port.

FALKENBURG.

Falkenburg, in lat. $56^{\circ}55' N.$, long. $12^{\circ}30' E.$, is about 15 miles S.E. of Warberg, on the river Atran, about a mile from its mouth.

Population.—3,500.

Imports.—Coal, phosphate, bran, and seed.

Exports.—Sawn timber, pit wood, oats, and stone.

Accommodation.—The depth of water in the river, where vessels lie safely, is 11 ft. ; in the inner roads, where vessels lie sheltered by a reef, 13 to $13\frac{1}{2}$ ft. ; and in the outer roadstead, where the holding ground is good, but open to all winds from the S. by W. to N.W., 26 ft. Two tugboats are always stationed here, whose services may be had at reasonable rates.

Pilotage.—Pilots can always be had on the usual signal being made ; no stranger should attempt to enter this port without one.

Port Charges.—**Port Dues** :—13 ore in, and 13 ore out, per ton.

Ballast :—50 ore per ton. **Loading** :—Pit-props, 1 kr. 25 ore ; deals and battens, steamers, 2 kr. 25 ore ; sailers, 50 ore, per standard. **Tonnage and**

Light Dues :—See **Sweden**. **Commission on Freight** :— $2\frac{1}{2}$ per cent.

FAROSUND.

Farosund, in lat. $57^{\circ}51' N.$, long. $19^{\circ}4' E.$, is on the N.E. coast of Gothland.

Accommodation.—The depth in the outer roads W. of Bungeör is 27 to 29 ft., E. of Bungeör, 10 to $11\frac{1}{2}$ ft. The N. entrance is 9 to 10 ft. deep, and the S. entrance $18\frac{1}{2}$ to 19 ft. The harbour is safe with 24 to 28 ft. of water. There are two public piers with a depth of $19\frac{1}{2}$ ft. alongside. The anchorage is good.

Pilotage.—Summer, 200 to 300 tons, 15 kr. ; 300 to 400 tons, 18 kr. Winter, 200 to 300 tons, 18 kr. ; 300 to 400 tons, 22 kr.

Port Charges.—**Tonnage Dues** :—3 ore per ton. **Light Dues** :—In, 25 ore per ton ; out, 25 ore per ton. **Harbour Dues** :—Coasters, 7 ore per ton ; foreign-going vessels, 10 ore per ton. **Measuring Vessel** :—2 kr.

FIGEHOLM.

Figeholm, in lat. $57^{\circ}22' N.$, long. $16^{\circ}35' E.$, is about 9 miles N.E. of Oscarshamn.

Exports.—Oats, pit-props, battens, and boards.

Accommodation.—Figeholm possesses a harbour capable of

Sweden—Figeholm (*continued*).

receiving vessels of 11 to 13 ft. draught. Vessels of 8 to 9 ft. draught can load at the pier; those of larger draught generally load in the roadstead, N. of Folgo, where there is sufficient depth of water for any sized vessel. The holding ground is good. Vessels clear at Oscarshamn.

Pilotage.—A pilot is indispensable, and can be obtained at Furon or Krakelund. Rates are the same as at Oscarshamn.

Port Charges.—Harbour Dues:—3 ore per reg. ton. **Ballast:**—15 ore per ton. Port dues and charges on a vessel of 100 reg. tons, £8 10s.

GEFLE.

Gefle, in lat. 60°41' N., long. 17°7' E., is about 10 English miles from the sea.

Population.—Including the suburb of Bomhus, about 35,000.

Imports.—Salt, grain, coal, colonial goods, etc.

Exports.—Sawn and planed wood, wood-pulp, iron ore, iron, and steel.

Accommodation.—The harbour is entered from both sides of Lim Island. The north entrance admits vessels drawing 21½ ft. (English), and that on the south side of the island 16 ft. The quays at the port all belong to the town, and are as follows:—The lower quay on the north side has 2,000 ft. of quayside with 17 ft. alongside, 1,000 ft. with 15 ft. alongside, and is fitted with 3 cranes to lift ½ ton each. The steamboat and Custom House quay is 1,000 ft. long, and can be reached by vessels drawing 15 ft., and is fitted with a crane to lift 8 to 10 tons. The warehouse quay is 1,000 ft. long, and can be reached by vessels drawing 11 ft. The coal quay is 600 ft. long, and has 15 ft. alongside. Nyhamn (new harbour) has a depth at the entrance of 17 ft.; length of quayside available, 700 ft.; depth alongside, 17 ft.; length of quayside for lighters, 2,100 ft. Fredriksskans (new harbour) has a length of 1,550 ft. of quayside with a depth of 21½ ft. alongside. There are 2 electric cranes, each to load 56 tons of iron ore per hour, and 2 electric cranes for discharging coal.

The outer roadstead is of considerable extent, where vessels drawing 21½ ft. can lie safely. There is the same depth of water alongside the quays at Skansen, which are now open for traffic, and where five steamer berths are available in the meantime. At these new quays, electric cranes and other modern facilities have been provided for the expeditious handling of coal, ore, and other heavy goods. Complete railway accommodation has also been arranged, so that loading and discharging can be effected at the lowest possible cost. The inner roadstead lying about 2 miles from the town, with an anchorage of 17 ft., is available for six or seven ships at a time. In the inner harbour on the north bank of the Gefle river there is about 12,000 ft. of quayside, with 17 ft. of water, where railway trucks come alongside, and where ample siding accommodation is provided for a large traffic.

Vessels drawing more than 21½ ft. must lie at Gräberget, about 7 English miles from the Custom House, where there is fairly safe anchorage. Iron shipbuilding is carried on to a small extent. There is a patent slip to lift 1,250 tons, and one for small vessels. There are 2 shipbuilding yards where repairs can be executed, and sheer legs to lift 40 tons.

Pilotage.—The pilot station is at Eggegrund, where a cutter is sta-

Sweden—Gefle (continued).

tioned, but in bad weather the pilots are forced to withdraw to Lim Island, outside of which they meet vessels in their boats.

Port Charges.—Tonnage Dues :—10 ore per reg. ton in, and the same out. **Light Dues :—**25 ore per reg. ton in, and the same out. **Harbour Dues :—**10 ore per reg. ton.

Pro Forma Charges on a steamer of 750 reg. tons, arriving from, and bound for, a foreign port, with a cargo of coal in, and sawn wood out :—

	Inwards. Kr. ore.		Outwards. Kr. ore.
Tonnage dues at 10 ore per reg. ton	75 00		75 00
Light dues at 25 ore per reg. ton	187 50		187 50
Custom House passport			1 00
Inward pilotage from the sea	40 00		
Outward pilotage to the sea			40 00
Sailors' home dues at 3 ore per reg. ton			22 50
Harbour dues at 10 ore per reg. ton	75 00		75 00
Harbour pilot, about	5 00		10 00
Consul's fees			2 30
Extras to Custom House officers, about	8 00		
Custom visit money	12 00		
Towage, about	20 00		25 00
Commission for clearing as per tariffs	50 00		50 00
	<hr/>		<hr/>
	472 50	+	488 30 = 960 80 = £53 7s. 6d.

Steamer for bringing the captain and labourers to and from ship, 12 kr. per day if loading in the roads.

GOTHENBURG.

Gothenburg (Swedish name, Goteborg) is in lat. 57°42' N., long. 12°0' E., and stands on both banks of the river Gota 3 miles from its mouth. It has the most extensive commerce of any town in Sweden.

Population.—160,525.

Imports.—Coal, iron, bacon, manufactures of silk, linen and cotton, petroleum, machinery and implements, salt, colonial produce, etc.

Exports.—Iron and steel, ore, wood, grain, dairy produce, paper, wood-pulp, matches, etc.

Accommodation.—The entrance to the harbour is 492 ft. wide and 23 ft. deep. Skeppsbron quay is 5,412 ft. long, with 16½ ft. alongside. Lilla Bommen is 1,738 ft. long, with 11¾ ft. alongside. Gullbergs quay is 5,315 ft. long, with 7 to 11¾ ft. alongside. Masthuggs quay is 2,722 ft. long, with 19½ ft. alongside. A new quay is nearly finished, and will be 1,380 ft. long, with 20 to 26¼ ft. alongside. There are electric and steam cranes on the quays to lift from 1½ to 6 tons, and a floating crane to lift 50 tons. Ships which, owing to their draught, cannot get alongside the quays, discharge and load by the aid of lighters in the river, where there are suitable moorings; the bottom of the river consists of soft mud. There is a canal from here to Soderkoping, on the Baltic, which is navigable by vessels not more than 105 ft. long, 22½ ft. broad, and 9¼ ft. draught. There are seven ship-building yards for sailing vessels, and three for steam vessels, two of which have two patent slips each, 2 to raise 1,000 tons, and 2 to raise 500 tons. There is a dry dock 410 ft. long, 58 ft. wide, and 19 ft. 6 in. deep, that will take a vessel of 3,500 tons. There is a crane to lift 30 tons, and sheers to lift 50 tons.

Sweden—Gothenburg (*continued*).

Time Signals.—Chronometers can be checked. A ball is hoisted close up 5 minutes before the signal on the School of Navigation, and lowered half way 2 minutes before the signal. The ball is dropped at noon Greenwich mean time, equal to 1 h. 0 m. 0 s. Swedish mean time and 0h. 47 m. 52 s. local mean time.

Pilotage.—Compulsory. Government pilots will, as a rule, be found about the Skaw at all seasons. Rates according to the distance and tonnage of the vessel. Harbour pilot, 1 ore per net reg. ton for steamers; 1·5 ore per net reg. ton for sailing vessels.

Port Charges.—Foreign trading vessels have to pay the following dues, namely :—

Tonnage Dues :—10 ore per net reg. ton, inwards as well as outwards, but only the first voyage outwards during the calendar year, and upon a vessel's return only when she carries a cargo exceeding a tenth of her net reg. tonnage, and discharges the same or any part thereof. If discharging or loading takes place at several ports, the tonnage dues are only payable at the first port of discharge or loading.

TONNAGE DUES ARE NOT PAYABLE :—

1. On ships which, on their passage between foreign ports, touch at a Swedish port only to land passengers and their luggage, or to discharge cargo into another vessel to be re-exported.

2. Ships in distress, or for orders.

3. Ships which, in consequence of damage, put in for repairs, and having discharged cargo for that purpose, re-load the same cargo. Part of the cargo may be sold in order to defray the expenses of repairs.

Ships which, on their passage between foreign ports, discharge or load cargo in a Swedish port, not exceeding one-fourth of the ship's burthen, for which the ship's documents will serve as guide.

In all these cases captains must give notice to the nearest stationed Custom House officer, and deliver to him the entry of the cargo.

Light and Beaconage :—See **Sweden**.

When the cargo does not exceed a tenth of the net reg. tonnage, the vessel is considered to be in ballast.

Town Dues :—During the months of December, January, and February (the town being liable to keep suitable steamers for ice-breaking, running between the port and sea), 15 ore per net reg. ton, payable each voyage, inwards and outwards, whether in ballast or loaded; during the other months of the year 10 ore per net reg. ton each voyage, both inwards and outwards. Vessels doing a regular trade between Gothenburg and foreign ports receive a reduction of 10 per cent., and vessels trading between Gothenburg and other Swedish ports pay only 7½ ore per net reg. ton.

Shipping Office :—3 ore per reg. ton (net). If a ship departs several times during the same calendar month from the same Swedish port, this payment is limited to once a month.

Ballast :—According to arrangement.

The Controller of Customs receives a fee of 5 kr. for clearing a vessel inwards on what is termed overtime.

Custom House Officer :—50 ore per hour for every officer attending, etc., during overtime. **Tug Steamers :**—No tariff, according to agreement.

Stevedore :—Day labourers, 5 kr. per day of 10 hours; night labourers,

Sweden—Gothenburg (continued)

6 kr. 50 ore for 10 hours ; overtime, 60 ore per hour ; night work, 65 ore per hour on week-days ; on Sunday, and night to and from Sunday or holiday, 1 kr. per hour. Loading wood goods, 2 kr. 50 ore to 4 kr. per standard ; grain, 60 to 85 ore per ton ; iron, 75 ore per ton ; wood-pulp, etc., 90 ore per ton. Labourers' insurance, 3 per cent. on stevedore's bill. Steamers moored in the river have to pay transport of the workmen to and from the steamer, about 25 to 40 kr. per day.

Brokerage :—Upon clearing of ships in and out (both included) :—

	Kr.	ore.
For a ship up to 70 reg. tons	23	33
„ from 71 to 100 reg. tons	29	16
„ „ 101 „ 130 „	35	00
„ „ 131 „ 190 „	46	66
„ „ 191 „ 250 „	58	33
„ „ 251 „ 350 „	70	00
„ „ 351 „ 450 „	81	66
„ „ 451 „ 550 „	93	33
„ „ 551 „ 650 „	105	00
„ above 651 reg. tons.	116	66

Or by special agreement.

UPON CHARTERING OF SHIPS.

For a voyage between Europe and Transatlantic ports, $1\frac{1}{2}$ per cent. for a voyage to or from ports in the Mediterranean or Black Sea, 2 per cent. and in all other cases of chartering, 3 per cent. on the amount of freight.

For making out Freight Accounts and Collecting of Freights :—For ships arriving from Transatlantic ports, $\frac{1}{2}$ per cent.

For other work in connection with the clearing of vessels, but not strictly belonging thereto, such as drawing up of protests and completion of average documents, etc., payment is made according to separate agreement.

Fresh Provisions :—Cheap and good ; beef about 6*d.* to 8*d.* per pound. Fresh water, 2*s.* 3*d.* per ton, f.o.b.

Coals :—North country, about 20*s.* to 21*s.* per ton, f.o.b. All other necessities obtainable, and at reasonable prices.

Pro Forma Charges on an English steamer of 1,000 reg. tons, from a foreign port, loaded with general merchandise :—

	Inwards.	Outwards.	
	Kr.	ore.	Kr.
Pilotage	49	00	39
Light and beacon money at 25 ore per reg. ton	250	00	250
Tonnage duty at 10 ore per reg. ton	100	00	100
Town and river dues at 10 ore per reg. ton	100	00	100
Harbour master's dues	10	00	
Custom House clearance	5	00	1
People's pass			30
Consul, for certifying crew list			2
„ to English church, 5 <i>s.</i>	4	55	28
Clearance fee	58	33	58
			Kr.
	576	88	+ 581
			11 = 1,157
			99 = £64 6 <i>s.</i> 8 <i>d.</i>

¹ During December, January, and February the town dues are increased by 50 per cent. on account of ice-breaker.

HALMSTAD.

Halmstad, in lat. 56°40' N., long. 12°51' E., is situated on the N.E. part of the bay, at the mouth of the river Nissa.

Population.—17,880.

Sweden—Halmstad (*continued*).

Imports.—Coal, manure, wool, jute, logwood, pig-iron, colonial goods, sulphur, etc.

Exports.—Timber, joinery, pit-props, wood-pulp, laths, paper, paving stones, butter, bacon, charcoal, etc.

Accommodation.—With N.N.W. or W. winds there is 15 to 16 ft. of water in the inner harbour, but with strong N.N.W. or W. winds sometimes 2 ft. more; with strong E. or S. winds only 13 ft. 6 in. to 14 ft. The new breakwater affords good anchorage for vessels up to 15 or 16 ft. The roads are well sheltered for winds from W. over N., and E. to S.E., and have 4 to 5 fathoms of water, and good holding ground. Vessels drawing more than 16 ft. discharge and load part of their cargo in the roads, and take into the harbour as much as the depth allows. Gales from S. and S.W. cause a swell in the roads, preventing discharging or loading there. Small repairs can be executed both to ships and machinery. Good supply of provisions and water. There is 4,950 ft. of quayage with 15 to 15½ ft. alongside. There is a crane to lift 4 tons, 1 to lift 10 tons, and 2 to lift 3 tons.

Pilotage.—Compulsory on all vessels over 40 tons. Pilots can be obtained outside the roads if signalled for.

Reg. tons.	Inwards and the same outwards	
	Summer.	Winter.
40 to 100	Kr. 5	Kr. 7
101 „ 200	8	10
201 „ 300	10	13
301 „ 400	12	16
401 „ 500	15	19
501 „ 600	17	22
601 „ 700	19	25
701 „ 800	22	28
801 „ 900	24	31
901 „ 1,000	26	34
1,001 „ 1,500	29	37

Tugboats always to be had, if required, at the rate of 3 ore per reg. ton.

Port Charges.—Harbour Dues:—12 ore per reg. ton in, and the same out. **Stevedore:**—Loading, 1 kr. 50 ore per standard props, and 2 kr. 50 ore to 3 kr. 50 ore per standard timber; discharging, coal, 60 ore per ton; general cargo, 65 ore per ton; pig-iron, 50 ore per ton; coke, 1 kr. per ton; bran in bags, 70 ore per ton; corn in bags, 50 ore per ton; oil, creosote, etc., 60 ore per ton. **Ballast:**—60 ore per ton. **Light Dues and Tonnage Dues.**—See Sweden.

Pro Forma Charges on a steamer of 600 reg. tons, 1,000 d.w., arriving at Halmstad from England, and sailing for England:—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Pilotage	25 00	25 00
Tugboat	18 00	18 00
Light and beacon money	210 00	210 00
Harbour dues	72 00	72 00
Stevedore discharging and loading	612 00	487 50
Boatmen	5 00	5 00
Watchman	18 00	5 00
Customs	18 00	10 00
Brokerage, 3 per cent., £6 15s.	122 85	—
Clearance	45 00	45 00
Brokerage, 3 per cent., £7 6s. 3d.	—	133 09
Navigation office expense	—	18 00
Custom stamp	—	1 00
Postage	2 50	2 50
	1,148 35 +	1,032 09 = 2,180 44 = £121 2s 8d.

Sweden.

HAPARANDA.

Haparanda, in lat. 65°50' N., long. 24°0' E., is opposite Tornea.

Population.—2,000.

Accommodation.—There is 13 ft. of water in the channel, and 18 ft. at the anchorage.

HARNAS.

(See *Skutskär* and *Harnas*, p. 641.)

HELSINGBORG.

Helsingborg, in lat. 56°0' N., long. 12°43' E., is situated on the Sound, opposite Elsinore.

Population.—33,000.

Imports.—Colonial produce, coal, sugar, grain, manure, phosphate, rock, copper ore, oilcake, etc.

Exports.—Grain, cattle, beef, bacon, butter, eggs, fire-bricks, clay, wood-pulp, iron ore, and timber.

Accommodation.—The entrance channel is 900 ft. long, 250 ft. wide, and with a depth of 25 ft. The new harbour has 4,795 ft. of quayside, 974,000 sq. ft. of water area, is 23½ ft. deep at the quayside and at the entrance. The old harbour has 5,340 ft. of quayside, 866,000 sq. ft. of water area, is 23½ ft. deep at the entrance, and has 16, 19, and 23½ ft. alongside the quays. There are cranes to lift 10 tons, and a mast crane to lift 30 tons. In bad weather the harbour forms an admirable port of refuge. A light-house, with a pilot and signal station, are on the pier head. There are ship-building yards, with engine works, and a dry dock (275 ft. long by 44½ ft. wide at the entrance, and 16 ft. on the sill, the bottom 2 ft. below the sill), where repairs can be executed. Provisions can be had, also stores out of bond; fresh water from the quay or water-boat. Several steam-tugs on moderate terms. Bunker coal supplied day or night.

Helsingborg has the privilege of storing merchandise in bond, and receiving goods in transit. It is connected by rail with all the lines in Sweden, and by steam ferry with Elsinore.

Pilotage.—

Net, reg. tons.	Summer. Kr.	Winter. Kr.
Under 100	5	7
101 to 200	8	10
201 „ 300	10	13
301 „ 400	12	16
401 „ 500	15	19
501 „ 600	17	22
601 „ 700	19	25
701 „ 800	22	28
801 „ 900	24	31
901 „ 1,000	26	34
1,001 „ 1,500	29	37
1,501 „ 2,000	31	40
2,001 and above	33	43

Steamers putting in for bunker coal only pay half pilotage.

Port Charges.—Tonnage Dues :—10 ore per reg. ton in, paid each time with cargo; 10 ore per reg. ton out, payable only once a year. **Harbour Dues** :—Vessels from and to a foreign port, 12 ore per reg. ton in, and the same out; vessels from and to a Swedish port, 9 ore per reg. ton in, and the same out. **Light Dues** :—25 ore in, and 25 ore out, loaded or in ballast, payable four times by sailing vessels, and eight times by steamers, during

Sweden—Helsingborg (*continued*).

the calendar year, free afterwards. **Towage** :—About 35 kr. for 400 tons. **Stevedore** :—Discharging coal, grain, or phosphate ore, 65 to 75 ore per ton ; oilcake, 1 kr. per ton. **Ballast** :—1 kr. per ton, f.o.b. Vessels discharging only part cargo pay full charges, but the tonnage dues and light dues are only charged once in and once out, if discharging or loading at one or more Swedish ports during the same voyage. Steamers calling for coal are free from all expenses except half pilotage, as are also ships seeking refuge. Ships under repair, or ice-bound, pay only pilotage and harbour dues. **Water** :—Fresh water, 3 kr. 50 ore per ton.

Pro Forma Charges on a steamer of 1,000 reg. tons, arriving from and bound to a foreign port, inwards, 2,000 tons coal ; outwards, 2,000 tons oilcake, or eventually via a Swedish port, in ballast or with cargo :—

	Kr.	ore.
Tonnage dues inwards, 100 kr. ; light dues inwards, 250 kr. .	350	00
„ „ outwards, 100 kr. ; light dues outwards, 250 kr. .	350	00
Harbour dues inwards	120	00
„ „ outwards	120	00
Pilotage inwards	37	00
„ outwards	37	00
Manifests and Customs entries	10	00
Consul's fee	2	30
Custom House inspection on overtime } if { 15 to 20 kr. }	say	40 00
„ „ clearing } any { 6 „ 20 „ }		
„ „ officers for overtime } any { 15 „ 30 „ }		
Labourage discharging coal, grain, and manures, 65 to 75 ore per ton ; oilcake, 1 kr. per ton ; bran, 1 kr. 15 ore per ton	3,500	00
Clearance	100	00
Passport	1	00
Lastage dues to shipping office	30	00
Tugboat (if any) in and out, about	90	00

4,787 30 = £265 19s. 2d.

HERNOSAND.

Hernosand is in lat. 62°38' N., long. 17°57' E.

Population.—8,000.

Imports.—Colonial produce, salt, brandy, coal, coke, corn, wine, canvas, cordage, etc.

Exports.—Timber, deals, battens, boards, oars, spars, tar, wood-pulp, etc.

Accommodation.—The harbour is large and safe, with a depth of from 40 to 60 ft. on a good anchorage. There are two public quays, with a length of 5,500 ft., and a depth alongside of from 13 to 17 ft. The inner harbour is perfectly sheltered, and has a depth of 15 to 25 ft., with good anchorage. There are mechanical factories and wharves where vessels can be slightly repaired. There is a small patent slip to take vessels up to 150 tons.

Provisions can be obtained at ship-chandleries, or daily by steamers from Stockholm and Finland. Coal can be obtained at about the same price as in Elsinore.

Pilotage.—Pilots can be obtained at Herno Klubb, opposite the Lungö Lighthouse.

Port Charges.—**Tonnage Dues** :—10 ore per reg. ton in, and the same out. **Lighthouse Dues** :—25 ore per reg. ton in, and the same out.

Sweden—Hernosand (*continued*).

Nyland.—Lat. 63°0' N., long. 17°42' E. At the quay there is 17 ft. of water ; in the roads, 15 fathoms. The harbour is good, except in spring, when there is a strong current.

Rosso.—Depth in the roads, 6 fathoms ; good harbour.

Kungsgården.—Depth of water at the quay, 10 ft. ; in the roads, 5 fathoms ; good harbour.

Marieberg.—Lat. 64°3' N., long. 20°52' E. Depth at the quay, 12 ft. ; in the roads, 15 fathoms.

Bollsta.—Depth at the quay, 15 ft. ; in the roads, 7 fathoms ; good harbour.

Waija.—Depth at the quay, 14 ft. ; in the roads, 10 fathoms.

Dynas.—Good harbour, with 8 fathoms of water.

Sandviken.—In the roads there is a depth of 5 fathoms.

Koja.—Depth at the quay, 18 ft. ; in the harbour, 5 fathoms.

Lockne.—Depth at the quay, 20 ft. ; in the roads, 15 fathoms.

Kramfors.—Depth at the quay, 14 to 23 ft. ; in the roads, 11 fathoms ; good harbour.

Brunne.—Depth at the quay, 12 ft. ; in the roads, 6 fathoms.

Bjorknas.—Depth at the quay, 12 ft. ; in the roads, 6 fathoms ; good harbour.

Frano.—Depth at the quay, 12 ft. ; in the roads, 6 fathoms.

Lugnvik.—Depth at the quay, 14 ft. ; in the roads, 15 fathoms.

Swano.—Depth at the quay, 13 ft. ; in the roads, 6 fathoms.

Stromnas.—Depth at the quay, 13 ft. ; in the roads, 6 fathoms.

Sando.—Lat. 62°53' N., long. 17°14' E. Depth at the quay, 24 ft. ; in the roads, 15 fathoms. In the channel E. of Sando there is only 22 ft. ; and the fairway is almost closed by salmon fisheries, which makes it difficult for large vessels to pass.

Lunde.—Good harbour and anchorage.

Sprangsviken.—Depth at the quay, 13 ft. ; in the roads, 18 fathoms.

Dal.—Depth at the quay, 13 ft. ; in the roads, 12 fathoms.

Ramvik.—Lat. 62°49' N., long. 17°51' E. Depth at the quay, 8 ft. ; in the roads, 6 fathoms.

Utansjö.—Lat. 62°46' N., long. 17°54' E. Depth at the quay, 17 ft. ; in the roads, 8½ fathoms.

Ro.—Depth in the harbour, 10 fathoms.

Ulfvik.—Depth at the quay, 8 ft. ; in the roads, 11 fathoms ; harbour good.

Aland.—Lat. 62°40' N., long. 17°55' E. Depth at the quay, 4 ft. ; in the roads, 4 fathoms.

Omne.—Depth at the quay, 13 ft. ; in the harbour, 13 fathoms.

Salsaker.—In Ullanger Bay, depth at the quay, 12 ft. ; harbour good, with 4 to 6 fathoms.

Ullanger.—Depth at the quay, 12 ft. ; in the harbour, 24 ft. ; harbour good.

Docksta.—Depth at the quay, 10 ft. ; in the harbour, 21 ft.

Naske.—Depth at the quay, 12 ft. ; in the harbour, 6 fathoms.

Kopmanholmen.—Depth at the quay, 10 to 15 ft. ; in the harbour, 12 fathoms.

Strangon.—Depth at the quay, 7 to 9 ft. ; in the harbour, 19 to 20 ft. ; harbour small, but good.

Vessels bound for any of the above-named sub-ports can clear at Herno-

Sweden—Hernosand (continued).

sand ; if with cargo, liable to duty, vessels are compelled to anchor at Hernosand and clear at the Custom House there. Vessels in ballast are allowed to go direct to Kopmanholmen.

Pilotage.—Pilots for sub-ports on the Angermann river can be obtained at Herno Klubb, opposite the Lungo Lighthouse, and for sub-ports along the northern coast at Herno Klubb or at Ulfo.

Pro Forma Charges at Nyland, Bollsta, and Kungsgarden, on an English vessel (sailer or steamer) of 670 reg. tons, arriving from a foreign port and bound to a foreign port :—

	Kr.	ore.
Pilotage in from Herno, 12 ft. with attestation	36	50
" out to " 18 " "	57	00
Harbour pilot	5	00
Tonnage duty, inwards, at 10 ore per register ton	67	00
Lighthouse dues, " at 25 " "	167	50
Tonnage duty, outwards, at 10 " "	67	00
Lighthouse dues, " at 25 " "	167	50
Harbour dues, inwards and outwards, at 16 ore per reg. ton	107	20
Sea protest and declaration (if required)	3	00
Shipping-office duty	20	10
" " for Swedish list of crew	5	00
Consul's fees	2	28
Custom House passport	1	00
Advertisements, postages, and petty charges	6	00
Towboat charges, in and out, about	150	00
Custom House officer, if clearing, extra { in	8	00
{ out	5	00
Commission for clearing in and out	100	00
	975	08 = £54 3s. 4d.

NOTE.—For vessels coming from or going to an inward port, clearing commission 25 per cent. less.

Pilotage from September 1 to April 30, 25 per cent. more.

Port charges for the other loading places on the Angermann river are the same, the only difference being in the pilotage and towage.

Pro Forma Charges at Kopmanholmen, Naske, Waija, Ullanger, Docksta, Omne, and Salsaker, on an English vessel (sailer or steamer), of 670 reg. tons, arriving from a foreign port and bound to a foreign port :—

	Kr.	ore.
Pilotage in from Herno to Hernosand, 12 ft., with attestation	14	50
" out to Herno from Hernosand, 12 ft., with attestation	13	10
" in from Herno to Ulfo, 12 ft.	54	10
" " Ulfo to any of the aforesaid ports, 12 ft.	22	60
Harbour pilot	5	00
Tonnage duty, inwards, at 10 ore per register ton	67	00
Lighthouse dues, " at 25 " "	167	50
Tonnage duty, outwards, at 10 " "	67	00
Lighthouse dues, " at 25 " "	167	50
Harbour dues, inwards, at Hernosand, at 10 ore (if coming from an inward port, 5 ore)	67	00
Harbour dues at loading place, at 16 ore.	107	20
Sea protest and declaration (if required)	3	00
Shipping-office duty, at 3 ore per register ton	20	10
" " for Swedish crew list	5	00
Consul's fees	2	28
Custom House passport	1	00
Advertisements, postages, and petty charges	6	00
Towboat charges, in and out (from Herno to Hernosand, and return), about	60	00
Custom House officer, if clearing, extra { in	13	00
{ out	5	00
Commission for clearing in and out	100	00

Sweden—Hernosand (*continued*).

NOTE.—For vessels coming from or going to an inward port, clearing commission 25 per cent. less.

Pilotage from September 1 to April 30, 25 per cent. more.

HÖGANÄS.

Höganäs is situated 12 miles N.W. of Helsingborg.

Population.—4,000.

Imports.—Coal, salt, bran, and oilcake.

Exports.—Coal, fire-bricks, fire-clay, and pipes.

Accommodation.—The pier, which extends in a S.W. direction, is 1,400 ft. in length, and serves as a quay with railway track for its whole length. At the outer end of the pier and harbour, for a length of 800 ft., there is a depth of 16 ft. ; for the next 300 ft. a depth of 14 ft. ; and at the inner 300 ft. a depth of 10 ft. The inner cross quay, which is 1,600 ft. in length, has a depth alongside of 8 to 10 ft. The roads are protected from S. round E. to N. winds, and afford anchorage in 18 to 20 ft. The depths of water in this port are somewhat affected by winds. There is railway connection with Helsingborg.

Pilotage.—Compulsory for vessels coming from foreign ports.

Port Charges.—Wharfage :—8 ore per reg. ton, when going to Swedish ports ; 11 ore per reg. ton when going to foreign ports. **Ballast :**—30 ore per ton.

Pro Forma Charges on a steamer of 300 reg. tons, arriving with a cargo of coal from England, and leaving in ballast for another Swedish port, drawing 13 ft. loaded :—

	Kr.	ore.
Harbour dues, 11 and 8 ore per reg. ton	57	00
Brokerage	45	00
Pilotage, in and out	38	00
Boat hire	10	00
	150	00 = £8 6s. 8d.

HOLMSUND.

Holmsund is in lat. 63°40' N., long. 20°20' E.

Population.—1,100.

Imports.—Grain and coal.

Exports.—Wood and tar.

Accommodation.—Steamers can load up to 20 ft. at Holmsund, and complete inside of Brädska's pilot station. Coal and other cargoes from foreign ports are discharged in Djupvik, inside Holmsund, where there is about 16 ft. of water at the quay.

Pilotage.—For a vessel of 790 tons, 37 kr.

Port Charges.—Harbour Dues :—8 ore per reg. ton in, and the same out. **Light Dues :**—First voyage, 25 ore per reg. ton in, and the same out. **Ballast :**—2 kr. per ton.

Pro Forma Charges on a steamer of 790 reg. tons, 2,000 tons d.w., arriving at Holmsund from a foreign port ; and leaving in ballast (first voyage in the year) :—

HORNEFORS.

HUDIKSVALL.

During October, November, and December, vessels drawing more than 18 ft. cannot enter the harbour by night. The public quays are 1,315 ft. long, with 10 to 16 ft. alongside. There are several private piers with from 17 to 30 ft. alongside. The harbour is connected with the whole system of Swedish railways. Quarantine cannot be performed here. Ships coming from places not declared infected have free access. Masters of ships have to report themselves, or through a shipbroker, to the harbour-master. Dangerous goods, such as explosives and mineral oil, are discharged in the place appointed for the purpose. Vessels having on board very dangerous explosives are not allowed to enter inside Kastell Holmen. Only small repairs can be executed here. Divers can be had in case of a needful survey of the

Sweden—Hudiksvall (*continued*).

hull under water. Fresh water can be had from sailing tanks, pumped into the ship's bunkers, at 4 kr. per ton supplied. Coal is always in stock.

Pilotage.—The sea pilot station is situated on Agon, where duly licensed pilots are in attendance while the navigation remains open. Signal for pilot is the national colours on the foremast-head; charge fixed by the Government. Tugboats are to be had; charge is based on the tonnage of a vessel. Signal for tug, national colours on the main. Harbour pilot, 2 ore per reg. ton, but not exceeding 15 kr.

Port Charges.—Harbour Dues:—Vessels coming from or leaving for a foreign port, 9 ore per reg. ton; vessels coming from, or leaving for, a Swedish port, 7 ore per reg. ton. Vessels calling at Hudiksvall in distress, for coaling, repairs, laying in the harbour not more than two months, are free of all state and port charges; if staying longer pay the usual inwards harbour dues. Vessels seeking a market, and not taking cargo, pay only 25 per cent. of the usual harbour dues. **Light Dues and Tonnage Dues.**—See Sweden.

Discharging Ballast:—35 ore per barrel, when taken from the hold; 60 ore per ton for unloading the lighters and carting away. **Lighterage:**—3 ore per reg. ton. **Brokerage:**—For clearing in and out, usually 50 kr. irrespective of the size of the vessel. **Stowage:**—Sailing vessels, short props, etc. (stevedore), 45 ore per standard; floorings (stevedore and labourers), 2 kr. 25 ore per standard. Steamers—Deals, 1 kr. 85 ore per standard; battens, 2 kr. to 2 kr. 50 ore per standard; boards (planed and unplaned), 2 kr. 50 ore to 4 kr. per standard; ends, 4 kr. 75 ore per standard.

Pro Forma Charges on a sailing vessel of 175·97 tons reg., coming from and leaving for a foreign port:—

	Kr. ore.
Pilotage, in and out	42 00
Tonnage dues, in and out	35 20
Light dues, in and out	87 98
Shipping house dues, in and out	5 28
Harbour dues, in and out	31 67
Passport	1 00
Manifest	5 00
Bill of health	10 00
Petties	5 00
Brokerage	40 00

263 13 = £14 12s. 5d.

Pro Forma Charges on a steamer of 3,132·40 reg. tons, coming from a Swedish port and leaving for a foreign port (in this case tonnage and light dues are paid in the first Swedish port):—

	Kr. ore.
Pilotage, in and out	136 00
Harbour pilot, in	15 00
Harbour dues, in and out	501 18
Consulate	2 30
Manifest	10 00
Bill of health	15 00
Steam launch	5 00
Telegrams and telephone	15 00
Postage and petties	20 00
Custom House officer	10 00
Commission for clearing	100 00

829 48 = £46 1s. 8d.

Sweden—Hudiksvall (*continued*).

SAWING MILLS, IRON FACTORIES, AND LOADING PLACES IN HUDIKSVALL DISTRICT.

Gnarp.—The loading place is only suitable for 4 or 5 vessels of medium size at a time ; 16 ft. of water, good in summer, but not very safe in October or November. Lat. $62^{\circ}1' N.$, long. $17^{\circ}27' E.$

Hortefjenlen.—Good anchorage, and very easy to enter, but under easterly winds some swell sets in. Lat. $61^{\circ}59' N.$, long. $17^{\circ}24' E.$

Jattendal.—Entrance very easy ; ships load in the S.W. end of Northolmen ; 15 ft. water, good holding ground. Lat. $61^{\circ}57' N.$, long. $17^{\circ}22' E.$

Stockaviken.—Steam sawmill. Harbour is good, but entrance narrow ; 18 ft. of water. Eight or ten ships of 60 metres ($196\frac{1}{2}$ ft.) length can at the same time be moored here ; there are pilots to be had from Stockaviken, but foreign vessels should take an Ago pilot. Custom House inspection here. Lat. $61^{\circ}54' N.$, long. $17^{\circ}22' E.$

Stromsbruk.—Pulp manufactory. In the harbour there is only 10 ft. of water ; ships loading here lay outside. Loading is generally done at Stockaviken. Open to easterly winds, and not safe for sailing ships. Lat. $61^{\circ}52' N.$, long. $17^{\circ}22' E.$

Bjornsundet.—Loading place and safe anchorage ; 22 ft. of water. Lat. $61^{\circ}48' N.$, long. $17^{\circ}25' E.$

Arno.—Ships of all sizes will find a good anchorage here, in 6 to 7 fathoms of water. Six ships of 60 metres ($196\frac{1}{2}$ ft.) can moor in the loading place ; 25 ft. of water, good holding ground. Lat. $61^{\circ}42' N.$, long. $17^{\circ}24' E.$

Lingaro.—Brick manufactory. Same entrance as to Hudiksvall. Good and safe harbour ; 18 ft. of water. Lat. $61^{\circ}42' N.$, long. $17^{\circ}18' E.$

Saltvik.—Steam sawmill. A very good little harbour for 5 or 6 ships of 60 metres ($196\frac{1}{2}$ ft.) length ; 19 ft. of water, narrow entrance. Vessels drawing over 18 ft. lie outside to take in the remainder of their cargo ; anchorage good and safe in 25 to 30 ft. of water. Lat. $61^{\circ}40' N.$, long. $17^{\circ}16' E.$

Fagelvik.—A good little harbour for 3 or 4 medium sized vessels ; 16 ft. of water outside. A quarter of a mile distant is a good and safe anchorage, 10 to 12 fathoms. Lat. $61^{\circ}40' N.$, long. $17^{\circ}50' E.$

Bostjerdén.—The loading place is a quarter of a mile from the timber-yard ; 5 fathoms of water, good and safe. Lat. $61^{\circ}39' N.$, long. $17^{\circ}14' E.$

Iggesund.—Iron and steel manufactory, and steam sawmill. The entrance is narrow ; 19 ft. of water. Ships drawing more than 14 ft. of water lie $1\frac{1}{2}$ miles from the factory, in a good and safe anchorage, but ships under 14 ft. go up and moor near the timber-yard. Custom House inspection here ; pilot from Ago. Lat. $61^{\circ}38' N.$, long. $17^{\circ}6' E.$

Snaikmor.—Loading place and safe anchorage ground for vessels of any size. Lat. $61^{\circ}37' N.$, long. $17^{\circ}5' E.$

Enanger.—In the loading place there is 13 ft. of water. Ships drawing more have to complete their cargo outside Essviken in 5 fathoms of water, good and safe anchorage. Lat. $61^{\circ}33' N.$, long. $17^{\circ}16' E.$

KALMAR.

Kalmar, or Calmar, in lat. $56^{\circ}40' N.$, long. $16^{\circ}24' E.$, is about 30 miles up Kalmar Sound.

Population.—14,241.

Sweden—Kalmar (*continued*).

Imports.—Coal, salt, colonial produce, herrings, seeds, machinery, pig-iron, and lead.

Exports.—Deals, timber, pit-props, pitch, alum, paper, lime, stone, flour, oats, matches, and cattle.

Accommodation.—The harbour is about 75 acres in area, with a depth of from 11 to 20 ft. There is a depth of 40 ft. at Grimskär Light and good anchorage in the roads in from 23 to 40 ft. The quays are 6,000 ft. long, with a depth alongside of from 11½ to 20 ft. There is a wide straight channel up to the town, where a shoal, with narrow passages of between 19 and 20 ft. deep, runs across the Sound up to the port.

Loading and discharging in the roads is frequently connected with danger, especially late in the season. There is a patent slip capable of taking vessels of 400 tons. The channel leading up to the town is dredged and available for vessels drawing 20 ft. There is railway communication with the interior. There is a ballast crane on the quay to lift 12 tons, and a private grain elevator. Slight repairs can be carried out. Port rules are handed to shipmasters on their arrival. Seamen can always be obtained here.

Pilotage.—According to official tariff.

Port Charges.—**Light Dues** :—25 ore in, and 25 ore out, per reg. ton ; sailing vessels, payable four times a year ; steamers, eight times a year. **Last Money** :—10 ore in, and 10 ore out, per reg. ton (last money outwards, payable only on the first voyage). Vessels in ballast, 10 ore per reg. ton, payable only on the first voyage. **Water** :—25 ore per 30 gallons. **Provisions** :—Beef, 30 ore per lb. ; pork, 35 ore per lb. **Coal** :—18s. per ton. **Sand Ballast** :—75 ore per ton ; stone, 2 kr. **Chartering or Brokerage** :—3 per cent. on the amount of freight.

Pro Forma Charges on a vessel of 100 reg. tons, with cargo in and out :—

	Kr. ore.
Last money, in and out	20 00
Light dues „	50 00
Harbour dues „	20 00
Shipping dues „	4 50
Towage from road to harbour, in and out	30 00
Clearance, according to agreement, about	10 00
Stamps	1 00

135 50 = £7 10s. 7d.

KAPPELSHAMN.

Kappelshamn, in lat. 57°50' N., long. 18°48' E., is on the N. coast of the island of Gothland.

Exports.—Timber and lime.

Accommodation.—It is an open bay with a good anchorage in 5 to 6 fathoms, sheltered from winds from E.N.E. round S. to N.N.W. There is a jetty where three ships of 100 to 250 tons can moor in 14 to 16 ft. of water ; inside the jetty there is only 8 ft. of water. Wooden ships can be repaired at the wharf.

Pro Forma Charges on a vessel of 97 reg. tons, cargo in and out :—

Sweden—Karlskrona (*continued*).

ard. Loading wood props, 1 kr. 70 ore to 2 kr.; deals, 2 kr. 50 ore; battens, 3 kr. per standard. **Discharging**:—About 75 ore per ton. **Labourage**:—About 60 ore per hour. **Ballast**:—1 kr. per ton. **Brokerage**:—Clearing from 10 kr. per vessel, according to the scale, to 50 kr. above 650 tons; and the same out. **Chartering**:—3 per cent. on the amount of freight. Collection of freight, $\frac{1}{4}$ per cent. or gratis. Vessels which call at the port for coal, water, provisions, repairs, orders, or are windbound, without loading or discharging cargo, are free of dues, paying only half pilotage.

Pro Forma Charges on a vessel of 1,000 tons coming from a foreign country with cargo in, and going to a foreign country with cargo out:—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Pilotage (winter tax + 25 per cent.)	45 00	45 00
Tonnage dues at 10 ore per ton	100 00	100 00 ¹
Light " 25 " "	250 00	250 00 ²
Harbour " 12 " "	120 00	120 00
Navigation office dues, at 3 ore per ton, in	30 00	—
Custom House, 1 kr. 50 ore, and stamp, 1 kr.	1 00	1 50
Consulate duty	—	2 25
Clearance	50 00	50 00
	596 00	+ 568 75 = 1,164 75 = £64 14s. 2d.

¹ Tonnage dues out only to be paid once a year.

² Light dues only to be paid, in the same year, four times in and four times out.

KARLSTAD.

Karlstad, in lat. 59°23' N., long. 13°30' E., is situated at the mouth of the river Klar.

Population.—16,000.

Imports.—Colonial products, coal, coke, grain, etc.

Exports.—Deals, battens, boards, laths, pit-props, wood-pulp, paper, iron, etc.

Accommodation.—There is a depth of water of 10 ft. There are electric cranes on the quay, with a lifting capacity up to 15 tons. To reach Karlstad vessels have to pass through the Göta Canal.

Port Charges.—**Entrance Fees**:—6 ore per reg. ton. **Clearance Fees**:—10 kr. in and out.

KUNGSBACKA.

Kungsbacka, in lat. 57°31' N., long. 12°3' E., is at the head of the fiord of the same name, and is a small place only suitable for coasters.

Population.—1,028.

Accommodation.—The depth of water in the harbour is 7 ft. Outside, in the fiord, there is anchorage in 6 fathoms, well sheltered, about 4 miles from the town.

Port Charges.—**Port Dues**:—12 ore per reg. ton in, and the same out; when loading or discharging in the roads, 6 ore per reg. ton in, and the same out. **Light Dues**.—See **Sweden**.

Sweden.

KYLORN.

Kylorn, in lat. $63^{\circ}34'$ N., long. $19^{\circ}48'$ E., is situated 4 miles S.W. of Mo.

Accommodation.—Vessels of 22 ft. draught find safe anchorage here. Clearance must be effected in and out at Mo.

Pilotage.—No stranger should attempt to enter Kylorn without a pilot, who is always to be found at Jarnas Udde, at the entrance to the fiord.

Port Charges.—Same as at Mo. This port is now seldom used by foreign vessels.

LANDSKRONA.

Landskrona, in lat. $55^{\circ}53'$ N., long. $12^{\circ}50'$ E., is about 12 miles from Helsingborg, opposite the island of Hveen.

Population.—15,760.

Imports.—Coal, grain, bran, provisions, phosphate, etc.

Exports.—Grain, butter, pork, firebricks, tiles, etc.

Accommodation.—Landskrona possesses an excellent harbour, with up to 24 ft. of water inside, and 23 ft. in the entrance channel. Alongside the quays in the outer harbour there is from 19 to 23 ft. of water, and in the inner harbour 19 ft. There is a good roadstead at "Staffens Bank," between the town and the island of Hveen. The port is equipped with a small shipbuilding yard for wooden vessels, also engine works and a foundry where repairs can be done. Landskrona is connected by rail with the main lines, and has the right of storing merchandise in bond, and receiving goods or transit. Provisions can be obtained, and all stores can be had out of bond. All goods paying duty are free of harbour dues.

Pilotage.—

Reg. tons.	Summer.	Winter.	Reg. tons.	Summer.	Winter.
	Kr.	Kr.		Kr.	Kr.
100	7	8	700	25	31
200	10	12	800	28	34
300	13	16	900	31	38
400	16	19	1,000	34	42
500	19	23	1,500	37	46
600	22	27	2,000	40	49

Port Charges.—**Towage** :—10 ore per reg. ton for loaded vessels ; in ballast, 10 to 20 per cent. less. **Tonnage Dues** :—10 ore per reg. ton in, and 10 ore out, for the first voyage from or to a foreign port during the same calendar year ; afterwards only if loaded, in. **Port Dues** :—From or to a foreign port, 11 ore ; from or to a Swedish port, 8 ore per reg. ton. **Light Dues** :—From or to a foreign port, 25 ore per reg. ton in and out ; paid only four times in any one year by sailing vessels, and eight times by steamers. **Ballast** :—1 kr. per ton.

Pro Forma Charges on a steamer of 1,000 net reg. tons, from the Tyne with 1,500 tons coal, and bound for a foreign port with a cargo of 1,500 tons oilcake :—

	Kr.	ore.
Tonnage dues in, 10 ore per reg. ton	100	00
" out, 10 ore per reg. ton (only the first time from Sweden during the same calendar year)	100	00
Light dues in, 25 ore per reg. ton, 250 kr. ; out 25 ore per reg. ton, 250 kr. (paid only four voyages in Sweden during the same calendar year)	500	00
Carried forward	700	00

Sweden—Landskrona (*continued*).

	Kr.	ore.
Brought forward	700	00
Harbour dues in, 11 ore per reg. ton, 110 kr.; out, 11 ore per reg. ton, 110 kr. (regular traders pay only one-fourth)	220	00
Shipping office fee out, 3 ore per reg. ton	30	00
Pilotage in, summer, from the road	34	00
Pilotage out, summer, to the road	34	00
Harbour pilot, boatman, etc., if used, together about	25	00
Labourage for discharging coal, 75 ore per ton; loading oil-cake, 1 kr. per ton	2,625	00
Stamp to Custom House passport	1	00
Clearance commission, in and out	100	00
Custom House officers for overtime, 75 ore per hour	75	00

3,844 00 = £213 11s. 1d.
LJUSNE.

Ljusne, or Liusne, in lat. 61°12' N., long. 17°8' E., is about 14 miles S. of Soderhamn.

Exports.—Timber, deals, battens, and iron.

Accommodation.—The outer harbour can be entered by vessels drawing 24 ft., and there is good anchorage in 5 fathoms. The inner harbour has a depth of 13 to 17 ft., and is perfectly sheltered. The public quay is 787 ft. long, with 13 to 14 ft. alongside.

Pilotage.—Strangers should not enter without a pilot. They are always on the look-out for ships in a cutter; in the autumn they are on the island of Lille Jungfrun.

Port Charges.—Same as at Soderhamn.

Pro Forma Charges on a brig of 150 reg. tons, coming from foreign port, ballast in, cargo of 70 standards of deals out :—

	Kr.	ore.
Pilotage in, 14 kr. 13 ore; pilotage out, 19 kr. 75 ore	33	88
Lastage dues, 10 ore in and 10 ore out once a year	30	00
Light dues, in and out, 25 ore (50 ore); Custom House pass, 1 kr.	76	00
Sailors' home, 3 ore per ton	4	50
Towage to loading berth	10	00
Harbour master, 2 kr.; postage, 3 kr.; towage to sea, 20 kr.	25	00
¹ Stevedore (single), per standard, from 50 to 70 ore (civis)	42	00
Use of prams for discharging 50 tons ballast	50	48
Harbour dues at 16 ore	24	00

295 86 = £16 8s. 9d.

¹ If men from shore are used for taking in cargo, the expenses will be higher.

LULEÅ.

Luleå is in lat. 65°35' N., long. 22°8' E.

Population.—9,900.

Imports.—Coal, etc.

Exports.—Iron ore, wood goods, etc.

Accommodation.—The harbour has a water area of 1,363 acres, with a depth of from 25 to 40 ft., the depth of the entrance channel being 25 ft. The north quay is 3,260 ft. long; south quay 1,401 ft.; with a depth at the quayside in each of 19½ ft. The length of newly constructed piers is 720 ft.; depth alongside the piers, 26 ft. The railway runs on to the piers. Depths vary about 9 in. according to the wind. There is good anchorage. There are two shoots to discharge 200 tons per hour. At Svartön there are

Sweden—Luleå (continued).

three quays and an elevated pier. The pier is 51 ft. above water, has 25 ft. alongside, and is fitted with four shoots that can discharge the contents of railway wagons into the ship's holds at the rate of 10,000 tons per day. There is a hydraulic lift to raise 120 tons to a height of 31 ft. in 5 minutes. Quay No. 1 is 3,386 ft. long, depth alongside 23 to 31 ft. No. 2 Quay, 600 ft. long, depth alongside 26 ft. No. 3 Quay, 360 ft. long, depth alongside 22 ft. There are two patent slips, one can receive vessels of 147 ft. length and the other vessels of 121 ft. length, and drawing 7 and 6 ft. respectively. In the largest slip the vessels are hauled up sideways. Only small repairs can be undertaken. This port is generally closed by ice from October to May.

Pilotage.—Pilot boats cruise 30 miles outside harbour at Rodkallen. Charges are according to tonnage and draught.

Port Charges.—Tonnage Dues :—2 ore per ton. **Port Dues :—**8 ore per ton. **Light Dues :—**25 ore per ton. **Towage :—**Not compulsory, about £5 for 2,000 ton vessel. **Shipbroker :—**Entrance, 50 kr.; clearance, 50 kr.; commission on freight, 1 per cent. **Stevedore :—**Loading, 2 kr. per standard; discharging coal, 90 ore per ton. Daily average work on vessel, 700 tons discharging, 3,000 tons loading. **Provisions :—**Plentiful but dear.

Pro Forma Charges on a steamer of 1,874 reg. tons from Great Britain, with a cargo of 2,967 tons of coal to Luleå, from Luleå with 3,110 tons iron ore to Scotland :—

	In. Kr. ore.	Out. Kr. ore.
Pilotage	74 50	73 00
Lastage dues	187 38	—
Light dues	468 50	468 50
Customs passport	—	1 00
Tonnage dues	—	56 21
Harbour dues	93 69	93 69
Dredging dues	—	187 38
Custom officer's visits	14 50	—
Custom officer's overtime	25 00	3 50
Consul's fees	—	2 25
Commission for collecting freight (1 per cent.)	105 49	—
Stevedore, discharging, 75 ore per ton	2,225 25	—
Labour, overtime	72 50	—
Tugboat	216 00	216 00
Steam launch attendance	—	30 00
Mooring boat	30 00	15 00
Trimming	—	90 00
Postages, telegrams, and petty expenses	—	27 40
Stevedore, loading 3,110 tons at 85 ore	—	2,643 50
Commission for clearance	50 00	50 00
	3,562 81 +	3,957 43 =
		Kr. ore. 7,520 24 = £417 15s. 9d.

MALMÖ.

Malmö, in lat. 55°36' N., long. 13°2' E., is situated on the E. side of the Sound, and nearly opposite Copenhagen.

Population.—79,820.

Imports.—Coal, coke, cotton, coffee, grain, flour, machinery, oils, etc.

Exports.—Live stock, butter, corn, wood, wood pulp, matches, etc.

Accommodation.—The depth of water in the entrance channel

Sweden—Malmö (continued).

is 22 ft. The outer harbour is 4,200 ft. long., width of entrance channel, 200 ft.; depth, 23 to 23 ft. 9 in.

Inner and Suei's Harbour.—Lengths (respectively), 4,500 and 1,000 ft.; depths, 20 to 17 ft. There are 5 cranes to lift from 5 to 10 tons each. There is also a set of Brown's hoisting and conveying cranes for discharging coal capable of dealing with 800 tons per day.

New Harbour.—Length, 2,362 ft.; width, 492 ft.; depth, 23½ ft.

Warfs Canalen.—Length, 1,000 ft.; depth, 19 ft. There is a canal on the north side of the town, 4,800 ft. long, available for vessels 190 ft. long, 32½ ft. beam, drawing 12 ft.

There is good anchorage in the N. and N.W. of the harbour. The leading marks to the harbour are two lighthouses in one, bearing S., 19° east. Rails are laid alongside the principal quays, and there is large shed accommodation free. There is a dry dock 210 ft. long over all, 34 ft. wide at the entrance at the high water ordinary spring level, and 12 ft. on the sill at ordinary high springs. There is a patent slip to raise 1,700 tons. Every kind of repair can be executed at the shipbuilding yard. There are several tugboats always ready to assist vessels.

Time Signals.—Chronometers can be checked. A ball is hoisted on the Observatory tower of the School of Navigation, 5 minutes before the signal. The ball is dropped at noon Greenwich mean time, equal to 1 h. 0 m. 0 s. Swedish mean time, and 0 h. 52 m. 0.5 s. local mean time.

Pilotage.—Compulsory. Rates are according to the register tonnage. Pilots for the Sound can be obtained from Svinbaden or Falsterbo lightships, and for Malmö from the pilot galot, anchored at Sjollen Shoal. Harbour pilot, from 5 to 9 kr.; compulsory for vessels of over 200 reg. tons.

Port Charges.—Harbour Dues:—Vessels from foreign ports, 12 ore per reg. ton; coasting vessels, 9 ore per reg. ton in, and the same out. **Tonnage Dues** (last money):—10 ore per reg. ton in and out. Outward dues only to be paid once a year. **Light Dues:**—25 ore per reg. ton, loaded or in ballast. **Shipping Office:**—3 ore per ton. **Discharging:**—65 to 75 ore per ton, according to cargo. **Labourage:**—4 kr. per day. **Waterman:**—5 kr. **Sand Ballast:**—1 kr. per ton delivered through a side port, or on a stage at the ship's side. **Water:**—1 kr. per 100 gallons, supplied from a boat or tug. **Brokerage:**—Clearing and interpreting, from 10 kr. for a vessel of 70 tons reg. to 50 kr. above 650 tons, and the same outwards.

Rates for the use of the dock will be charged for steamers on their gross tonnage, and for sailing vessels on their net reg. tonnage, as follows:—

DOCKING.

	Kr.	ore.
For vessels up to 100 tons inclusive	80	00
„ every additional ton up to 150 inclusive	0	55
„ 150 tons	107	50
„ every additional ton up to 250 inclusive	0	40
„ 250 tons	147	50
„ every additional ton above 250	0	50

If two vessels are docked at the same time the above rates will be reduced 25 per cent.

FOR REMAINING IN DOCK.

	Kr.	ore.
For every day per reg. ton	0	10
Lowest charge for a vessel per day to be	10	00

Sweden—Malmö (continued).

Towage :—From the road to the harbour, for a vessel of 500 reg. tons, about 45 kr.

Chartering :—Commission, 3 per cent. Collecting freight, 1 per cent. on the amount. Ships are not allowed to lay free longer than 4 days.

Vessels calling for provisions, bunker coal, repairs, or windbound, are free from harbour, tonnage, and light dues, paying for pilot only if one is used.

Pro Forma Charges on a steamer or sailing vessel of 600 reg. tons, coming from England with cargo, and bound for a foreign port with ballast :—

	Kr.	ore.
Inward tonnage dues, 10 ore per ton	60	00
„ light dues, 25 ore per ton	150	00
Outward tonnage dues, 10 ore per ton (is paid only once a year)	60	00
„ light dues, 25 „	150	00
Passport stamp	1	00
Inward harbour dues, 12 ore per ton	72	00
Outward „	72	00
Seamen's house dues, 3 ore per ton.	18	00
Inward pilotage on 600 reg. tons	22	00
Outward „	22	00
Harbour pilots	18	00
Boatmen	20	00
Harbour rule	0	50
Commission for clearing in and out	90	00
	755	50 = £41 19s. 5d.

Pro Forma Charges on a steamer of 1,000 reg. tons, from England to Malmö, with cargo in and out :—

	Kr.	ore.
Inward tonnage dues, 10 ore per ton	100	00
Light dues in, 25 ore per ton	250	00
Tonnage dues out, 10 ore per ton	100	00
Light dues out, 25 „	250	00
Stamp on Custom House passport	1	00
Harbour dues in, 12 ore per ton	120	00
„ out, 12 „	120	00
Seaman's house dues, 3 ore per ton	30	00
Pilotage from Elsinore, for 1,000 reg. tons	4	05
„ the road	34	00
Pilotage to „	34	00
Harbour pilot, boatman, etc.	18	00
Protest	3	50
Custom House officers for overtime	10	00
Harbour regulations	0	50
Clearance commission	100	00
	1,220	05 = £67 15s. 7d.

Pro Forma Charges on a steamer of 500 reg. tons, from England to Sweden, with cargo in and ballast out :—

	Kr.	ore.
Last money in	50	00
Light dues in	125	00
Harbour dues in	60	00
„ out	45	00
Pilotage from the road, 15 ft.	18	40
„ to the road, 10 „	10	30
Harbour pilot boatman, etc.	10	00
Custom House officers for overtime	4	00
Labourage for discharging 800 tons coal at 65 ore per ton.	520	00
Harbour regulations	0	50
Clearance commission	60	00
	903	20 = £50 3s. 6d.

*Sweden.***MARSTRAND.**

Marstrand, in lat. 57°53' N., long. 11°32' E., is almost due E. from the Skaw.

Population.—1,600.

Imports.—Coal, salt, and oats.

Export.—Herrings.

Accommodation.—The harbour is well sheltered, being almost land-locked, and capable of receiving 100 vessels. The northern entrance is the best. The depth of water in the harbour varies from 25 to 50 ft.

Pilotage.—Free when a pilot is not employed, but when employed, from April 1 to September 16—under 100 tons, 8 kr. ; 101 to 200 tons, 11 kr. ; 201 to 300, 15 kr. ; 301 to 400, 18 kr. ; 401 to 500, 22 kr. ; 501 to 600, 25 kr. ; 601 to 700, 29 kr. ; 701 to 800, 32 kr. ; 801 to 900, 36 kr. ; 901 to 1,000, 39 kr. ; 1,001 to 1,500, 43 kr. ; 1,501 to 2,000, 46 kr. ; over 2,001, 50 kr. About 20 per cent. more from September 16 to April 1. Pilots can always be had outside.

Port Charges.—**Harbour Dues** :—For all vessels, coming from, or going to, foreign ports, 5 ore per reg. ton ; coming from, or going to, inland ports, 3½ ore per reg. ton ; windbound, or those not discharging or loading, 2 ore per reg. ton. **Ropes** :—Taking ashore, 3 to 5 kr. **Light Dues, Beacon Dues, and Tonnage or Lastage Money.**—See **Sweden**. **Labour** :—4 to 5 kr. per man per day. **Shipbroker's Fees** :—According to agreement. The harbour regulations may be inspected at the office of the harbour master.

MO (NORRBYSKAR).

Mo, in lat. 63°33' N., long. 19°53' E., is about 20 miles S.W. of Umeå.

Accommodation.—The harbour is quite safe in all winds, and is very commodious. Vessels drawing up to 22 ft. can load in this harbour. Vessels clear here.

Pilotage.—Pilot station, Jarnas Udda. For charges, see **Nordmaling**.

Port Charges.—See **Nordmaling**.

MÖNSTERAS.

Mönsteras is in lat. 57°3' N., long. 16°27' E.

Accommodation.—There is a depth of water in the road of 20 ft., and in the harbour of 9 ft. Dredging operations are now going on. The loading place is about 2 miles from the town, it is quite safe and well sheltered. Tugboats can be had at moderate rates.

Pilotage.—400 tons, in or out—summer, 18 kr. ; winter, 22 kr.

Port Charges.—**Port Dues** :—16 ore per ton. **Light and Tonnage Dues.**—See **Sweden**.

NEDER CALIX.

Neder Calix, in lat. 65°52' N., long. 23°8' E., is on the river Calix.

Exports.—Deals, etc.

Accommodation.—Vessels drawing 10 ft. of water can ascend as

Sweden—Neder Calix (continued).

far as the town, and a vessel drawing 20 ft. can load about 3 miles down the river.

Expenses are about the same as at Luleå.

NORDMALING.

Nordmaling, in lat. 63°35' N., long. 19°29' E., is situated on the fiord of the same name, about 30 miles S.W. of Umeå.

Population.—300.

Accommodation.—The name of the harbour of Nordmaling is Notholmen. Rundvik is also on the fiord of Nordmaling. The depth of water at the quays of Rundvik and of Notholmen is about 12 ft., but there is good anchorage in 16 to 23 ft. Vessels are generally loaded with great dispatch at all loading places in Nordmaling, as every facility is given by the shippers. There is good anchorage at Mo outside Nordmaling for vessels up to 22 ft. draught.

Pilotage.—Rates according to the tonnage of a vessel. By showing the usual signal, the pilot boards the vessel outside Jarnas Udde.

Port Charges.—Tonnage Dues :—10 ore per ton. **Seamen's House Dues** :—3 ore per ton. **Light Dues** :—See Sweden. **Stowage** :—Deals, 2 kr. and upwards, per standard. **Water** :—If taken from the water-boats, 1 ore per gallon. **Provisions** :—Beef 40 to 50 ore per lb. Vegetables scarce. Butter and fish plentiful and cheap.

Pro Forma Charges on a steamer of 1,002 tons, arriving from Kiel, and bound for Dunkerque :—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Pilotage	56 00	51 00
Last dues	100 20	100 20
Lighthouse dues	250 50	250 50
Custom House passport	—	1 00
Harbour dues	80 16	80 16
Seamen's house	—	30 06
Clearing	30 00	30 00
	<hr/> 516 86	<hr/> 542 92
	+ <hr/> Kr. ore. 1,059 78 = £58 17s. 7d. <hr/>	

NORRBYSKAR.

(See Mo, p. 630.)

NORRKÖPING.

Norrköping, in lat. 58°34' N., long. 16°8' E., is situated on Braviken Bay, at Motala river.

Population.—45,528.

Imports.—Coal, coke, soda, cotton, wool, copperas, rye, tools, machinery, sugar, coffee, tobacco, pig-iron, wheat, etc.

Exports.—Deals, battens, boards, iron, oats, pit-props, beer, paper, woollen and cotton manufactures, iron ore, etc.

Accommodation.—The depth at Pampus, at the mouth of the river, is 23 to 33 ft., and the depth at Norrköping is 17½ ft. The public quay is 9,400 ft. long, the outer part having 19 ft. alongside and the inner part 17 ft. The ballast quay is 200 ft. long. There are three cranes on the public quay to lift from 4 to 12 tons, and four other electric cranes to lift 1½ tons, two on each side of the river. There is a grain elevator for vessels up to 500 reg. tons,

Sweden—Norrköping (*continued*).

The anchorage at Pampus is good. There is a dry dock 240 ft. long over all, 229 ft. on the blocks, 34 ft. wide at the entrance, with a depth of 10 ft. over the sill. Repairs can be carried out to vessels able to enter the dock.

Pilotage.—Per fixed scale, according to draught and tonnage.

Port Charges.—Towage:—According to arrangement, from £1 to £10. **Harbour Dues:**—12 ore per reg. ton in, and 12 ore out, for sailing vessels and steamers. **Tonnage and Light Dues:**—See **Sweden**. **Loading Ballast:**—8 ore per reg. ton, and a small charge for wheelbarrows. **Water:**—3 kr. per 1,000 litres. **Labourage:**—5 kr. per day. **Brokerage:**—Commission on chartering, 3 to 5 per cent. on the amount of freight. Clearing charges, according to the size of the vessel, as per government tariff. Collecting freight, 1 per cent. on the amount. **Loading Deals and Battens:**—2 kr. 50 ore per standard; boards, 3 kr. per standard. **Ice-breaker Dues:**—Inwards and outwards during December to March, 24 ore per reg. ton.

Pro Forma Charges on a steamer of 881·97 reg. tons, coming in with a cargo of coal, going out empty to U.K. or Continent, via Norrland, loading wood:—

	Kr.	ore.
Pilotage, inwards (winter tariff, 25 per cent. more)	83	00
" outwards	89	00
Tonnage dues, inwards, 10 ore per reg. ton	88	20
" outwards, 10 ore per reg. ton	88	20
Light dues, inwards, 25 ore per reg. ton	220	49
" outwards, 25 ore per reg. ton	220	49
Harbour dues, inwards, 12 ore per reg. ton	105	83
" outwards, 12 ore per reg. ton	105	83
Shipping office dues, 3 ore per reg. ton	26	46
Custom House officers	16	75
Stamp for passport	1	00
Collecting freights, 1 per cent. on the amount	62	30
Stevedore, discharging coal, 65 ore (in some cases 75 ore) per ton	938	92
Harbour pilot, 1 ore per ton	8	82
Boatman in and out	10	00
Hire of stages	25	00
Clearance inwards as per government tariff	50	00
" outwards	50	00
Manifest	5	00

2,195 29 = £121 19s. 3d.

NORRTELJE.

Norrtelje is in lat. 59°45' N., long. 18°46' E.

Population.—3,200.

Import.—Coal.

Exports.—Deals and boards.

Accommodation.—There is a depth of from 14 to 48 ft. on a good anchorage. There are no tides. The rise and fall of water depends on the wind in the offing. The length of quayage is 1,500 ft., with a depth alongside of from 6 to 14 ft. Railway connection with Stockholm and Upsala.

Pilotage.—Compulsory.

Port Charges.—Harbour Dues:—8 ore per reg. ton in, and the same out. **Ballast:**—Discharged, free; taken in, 1 kr. per ton. **Labour:**—4 kr. per day.

Pro Forma Charges on a sailing vessel of 308 reg. tons, with cargo of coal in, and deals out, drawing 13 ft. loaded:—

Sweden—Norrtelje (continued).

	Kr.	ore.
Harbour dues at 8 ore per reg. ton in, and the same out	49	28
Pilotage, in and out	52	00
Towage, in and out (about)	200	00
Customs charges, in and out	195	17
	496	45 = £27 11s. 8d.

NYHAMN.

Nyhamn, in lat. 61°18' N., long. 17°15' E., is situated at the mouth of the river Ljusne, about 14 miles south of Soderhamn.

Accommodation.—The harbour is perfectly safe and can accommodate from 30 to 40 vessels, drawing 17 ft. Vessels drawing more than 21½ ft. must lie at Graberget, about 7 miles from the Custom House, where there is a fairly safe anchorage, somewhat exposed to N.E. winds. The piers have 13½ to 19 ft. of water alongside.

Pilotage.—As the passage is somewhat difficult, strangers are recommended to take a pilot.

Pro Forma Charges on a British steamer, of 1,232·26 tons (Swedish measure), loading at Nyhamn :—

	In. Kr. ore.	Out. Kr. ore.
Signal	—	1 50
Pilotage	50 00	31 00
Last dues, 10 ore per register ton	123 23	123 23
Light dues, 25 ore	308 02	308 02
Customs pass	—	1 00
Harbour dues, 16 ore	—	197 16
Seamen's house, 3 ore	—	36 92
Swedish measure bill	—	173 95
Postage, telegrams, and telephone	—	8 60
Water bill	—	39 00
Custom House officer, 5 kr. ; manifest, 10 kr.	—	15 00
Doctor and medicine	—	10 00
Petty expenses, 10 kr. ; Consular fees, 2 kr.	—	12 22
22 ore	—	37 00
Harbour pilot's bill	—	37 00
Brokerage	50 00	50 00
	531 25 + 1,044	60 = 1,575 85 = £87 9s. 10d.

NYKÖPING.

Nyköping is in lat. 58°45' N., long. 17°2' E.

Population.—8,000.

Accommodation.—The depth at the entrance to the port is 16 ft., and there is 1,509 ft. of quayage, with a depth alongside of from 14 to 16 ft. Steamers discharge at a rate of 200 tons per day, and sailing vessels at a rate of 50 to 60 tons a day. There is good anchorage at Orsbaken, outside Skanssundet, with 17 to 26 ft. of water.

OREGRUND.

Oregrund, in lat. 60°19' N., long. 18°25' E., is about 70 miles N.E. of Stockholm.

Population.—About 1,200.

Import.—Coal.

Sweden—Oregrund (*continued*).**Exports.**—Timber and wood-pulp.**Accommodation.**—The channel leading to Oregrund, between the island of Gräsö and the mainland, is much used by vessels from northern ports in the Gulf of Bothnia proceeding south, so as to avoid the South Quarken. The length of the new stone pier is 165 ft., with a depth alongside of from 10 to 12 ft. The old wood pier has 12 to 13 $\frac{3}{4}$ ft. alongside. There is good anchorage at Kullbodahamn, with a depth of 20 to 50 ft.; also south of Dummelgrund in 24 to 30 ft. There is a repairing slip that will take vessels up to 500 tons, also a repairing shop. Steamers can always obtain coal at Gräsö, either at the pier, or by lighters, as there is good anchorage. Supplies can be obtained but fresh water is scarce.**Pilotage.**—Pilots can always be found off Svartklubb light, Orskar light, and Oregrund.**ORNSKOLDSVIK.**

Ornskoldsvik is in lat. 63°18' N., long. 18°46' E.

Population.—3,300.**Imports.**—Coal, salt, and sulphur.**Exports.**—Sawn and planed wood, wood-pulp, and props.**Accommodation.**—There is a Custom House where ships clear either inwards or outwards. At the anchorage there is sufficient depth of water for any size of vessel. There is rail connection with the Swedish main line.**Pilotage.**—Vessels from or to foreign ports have to take a pilot when over 40 tons reg., also other vessels not acquainted with the navigation. The charges are as under :—

For	500 tons register	inwards	27 kr.	and outwards	23 kr.
"	1,000	"	"	44 kr.	39 kr.
"	1,500	"	"	47 kr.	42 kr.
"	2,000	"	"	51 kr.	45 kr.

Winter rates from September 1st, 25 per cent. extra.

Port Charges.—**Light and Beacon Dues** :—For entering, 25 ore per reg. ton, and the same on leaving. **Stamp** for Customs pass on clearing outwards is 1 kr. **Seamen's Home** :—3 ore per ton reg. **Harbour Dues** :—Inwards for vessels coming from abroad, 5 ore per ton reg. and the same outwards; all rates being levied per Swedish reg. ton. **Stowage of Timber** :—From 2 to 5 kr. per St. Petersburg standard. **Ship's Clearance** :—From 50 kr. to 100 kr., but by prearrangement a cheaper rate may be obtained. **Water** :—From the cistern boat, 3 kr. 50 ore per 1,000 litres. **Towage** :—Sailing vessels may arrange with a tugboat in or out to sea for 25 to 50 kr.**OSCARSHAMN.**

Oscarshamn is in lat. 57°16' N., long. 16°28' E.

Population.—About 7,800.**Imports.**—Coal, coke, and manure.**Exports.**—Wood goods and granite.**Accommodation.**—There is good anchorage in 23 to 40 ft. of water. The harbour has an area of about 10 acres, and a depth at the en-

Sweden—Oscarshamn (continued).

trance of 24 ft. There is 3,000 ft. of quayage with a depth alongside of from 7 to 18 ft. There is a crane to lift up to $6\frac{1}{2}$ tons, and sheers to lift 50 tons, at Oscarshamn dry dock works.

No. 1 dry dock is 355 ft. long over all, 49 ft. wide at the high spring level, and 15 ft. on the sill.
No. 2 „ „ 157 „ „ and $7\frac{1}{4}$ ft. on the sill.

No. 2 is a recess in No. 1. No. 1 can take a vessel of 3,500 tons. Repairs to hull and machinery can be executed.

Vessels are moored with hawsers to the shore. Tugboats can be obtained.

Pilotage.—Pilots can always be obtained for vessels coming from the north at Furon, and for vessels coming from the south at Damman or Vallo.

Pilotage tariff from Furon to Oscarshamn, from April 1 to September 15, without travelling expenses :—

	Kr.		Kr.
Up to 100 tons	7	701 up to 800 tons	31
101 up to 200 tons	10	801 „ 900 „	35
201 „ 300 „	14	901 „ 1,000 „	38
301 „ 400 „	17	1,001 „ 1,500 „	42
401 „ 500 „	21	1,501 „ 2,000 „	45
501 „ 600 „	24	2,001 tons and above	49
601 „ 700 „	28		

From September 16 to March 31 :—

	Kr.		Kr.
Up to 100 tons	8	701 up to 800 tons	39
101 up to 200 tons	13	801 „ 900 „	43
201 „ 300 „	17	901 „ 1,000 „	48
301 „ 400 „	21	1,001 „ 1,500 „	52
401 „ 500 „	26	1,501 „ 2,000 „	56
501 „ 600 „	30	2,001 tons and above	61
601 „ 700 „	35		

Pilotage rates are the same, in or out. An additional krona is charged in each case for travelling expenses.

Port Charges.—**Tonnage Dues** :—10 ore per reg. ton in, and the same out. **Port Dues** :—14 ore per reg. ton, in and out. **Light Dues** :—25 ore per reg. ton in, and 25 ore per reg. ton out. **Ballast** :—Discharging, 8 ore per ton; loading, 16 ore per ton. Water from the water-boat, 3 ore per gallon.

Pro Forma Charges on a steamer of 700 net reg. tons, discharging coal and loading props :—

	Kr.
Tonnage dues, in and out, at 20 ore	140
Light dues, in and out, at 50 ore	350
Harbour dues, in and out, at 14 ore	98
Pilotage, in and out	58
Harbour pilot	5
Customs pass	1
Shipping office dues, at 3 ore	21
Tugboat assistance	30
Commission, in and out	100
Telegrams, postages, etc.	10
Custom House, overtime accounts	20
Stevedore, discharging coal	650
Stevedore, loading props	450

1,933 = £107 7s. 9d.

OXELÖSUND.

Oxelösund is in lat. $58^{\circ}40'$ N., long. $17^{\circ}8'$ E.

Sweden—Oxelösund (*continued*).**Population.**—About 2,200.**Imports.**—Coal, coke, grain, and oilcake.**Exports.**—Iron ore, pig-iron, bar-iron, paper, and machinery.

Accommodation.—The depth in the port is from 20 to 36 ft. The quay for passenger vessels is 200 ft. long, with a depth of from 10 to 14 ft. alongside. Public quay No. 1 is 320 ft. long, with 8 to 10 ft. of water alongside. No. 2 is 300 ft. long, with 10 ft. alongside. No. 3 is 600 ft. long, with from 10 ft. at some places to 19½ ft. at others; four steam cranes, and staithes for discharging 25 to 30 tons per hour. No. 4 is 286 ft. long, with 25 ft. alongside; three hoisting and conveying machines for discharging 600 to 1,000 tons of coal per day; also available for loading. No. 5 and 6 have a total length of 538 ft., with 25 ft. alongside; one crane to lift 20 tons and two small steam cranes. No. 7 is 280 ft. long, with 20 ft. alongside; four steam cranes to lift 3 to 4 tons; vessels can load at the rate of 1,400 tons a day. No. 8 is 336 ft. long, available for vessels drawing 24 ft.; six steam cranes to lift 3 to 4 tons; iron ore can be loaded at a rate of 1,800 to 2,400 tons a day; staithes discharging 25 to 30 tons per hour. There is also a private quay with 25 ft. alongside for discharging petroleum into six cisterns, with a capacity of 10,000 barrels each. Railway connection by Oxelösund-Flen-Westmanlands Järnväg, with tracks down to every quay in the harbour.

Pilotage.—Compulsory for vessels coming from foreign ports.

Port Charges.—Tonnage Dues:—10 ore per reg. ton in, and the same out. **Light Dues:**—25 ore per reg. ton in, and the same out. **Shipping Office Dues:**—3 ore per reg. ton. **Towage:**—Free for steamers. **Ballast:**—1 kr. per ton for sand, and 2 kr. per ton for stone.

Pro Forma Charges on a steamer of 1,000 reg. tons, arriving from abroad with a cargo of coal, leaving in ballast for a foreign port:—

	Kr.	ore.
Tonnage dues, inwards, at 10 ore per reg. ton	100	00
" " outwards	100	00
Light dues, inwards, at 25 ore per reg. ton	250	00
" " outwards	250	00
Custom House passport	1	00
Clearing overtime	10	00
Shipping office dues at 3 ore per reg. ton	30	00
Custom officer, inwards and outwards, about	15	00
Manifest, inwards	4	00
Pilotage, inwards (winter 124 kr.); summer	96	00
Harbour pilot, inwards and outwards	10	00
Fire survey	0	50
Boat assistance and men, inwards and outwards	10	00
Stevedore, discharging about 2,000 tons at 75 ore per ton	1,500	00
Telegrams, postages, and petties	10	00
Consul's fees (English), 5s.	4	50
Commission for clearing, inwards and outwards	100	00

2,491 00 = £138 7s. 9d.

Pro Forma Charges on a steamer of 1,000 reg. tons, arriving in ballast from a foreign port, and leaving with ore for a foreign port:—

	Kr.	ore.
Tonnage dues, inwards, at 10 ore per reg. ton	100	00
" " outwards	100	00
Light dues, inwards, at 25 ore per reg. ton	250	00
" " outwards	250	00
Custom House passport	1	00
Clearing overtime	10	00
Carried forward.	711	00

Sweden—Oxelösund (*continued*).

	Kr.	ore.
Brought forward	711	00
Shipping office dues, at 3 ore per reg. ton	30	00
Custom House officer, inwards and outwards, about	15	00
Manifest, inwards	4	00
Pilotage, inwards and outwards	96	00
Harbour pilot, inwards and outwards	10	00
Fire survey	0	50
Boat assistance and men, inwards and outwards	10	00
Stevedore, trimming about 2,000 tons at 6 ore	120	00
Telegrams, postage, and petties	10	00
Consul's fee (English), 5s.	4	50
Commission for clearing, inwards and outwards	100	00

1,111 00 = £61 14s. 4d.

PASKALLAVICK.

Paskallavick, in lat. 57°10' N., long. 16°29' E., is about 9 miles S. of Oscarshamn.

Population.—About 200.

Import.—Coal.

Exports.—Wood goods, oats, granite, and paper from Emforsbruk.

Accommodation.—The harbour, which cannot be entered by vessels drawing more than 15½ ft., has a depth of 10 to 27 ft., and about 10 vessels can lie well sheltered. Vessels can load to 10 ft. at the wharves.

Pilotage.—It is necessary to employ a pilot, who can be obtained either at Vallo, Furon, or Oscarshamn.

Port Charges.—**Harbour Dues** :—5 ore per reg. ton for vessels arriving or departing.

PATAHOLM.

Pataholm, or Pitholm, is in lat. 56°55' N., long. 16°27' E., about 6 miles north of Kalmar.

Exports.—Pit-props, laths, and boards.

Accommodation.—There is no harbour. Vessels anchor in the roadstead in 16 to 23 ft. of water on good holding ground. Cargo is brought off in lighters. There is a Custom House here.

Pilotage.—According to a fixed tariff.

Port Charges.—**Harbour Dues** :—10 ore per reg. ton. **Clearance** :—As per agreement.

PITEA.

Pitea is in lat. 65°19' N., long. 21°29' E.

Population.—3,000.

Imports.—Salt, coffee, sugar, etc.

Exports.—Timber, tar, etc.

Accommodation.—Vessels drawing 17 ft. can load at the sawmills in the district. The depth of water alongside the public quays is 20 ft. ; in the outer harbour, 23 to 33 ft. There is good anchorage.

Pilotage.—Pilots can be obtained at Rönnskar.

Port Charges.—**Harbour Dues** :—8 ore per ton. **Tonnage Dues** :—3 ore per ton. **Lastage Dues** :—10 ore per ton. **Light Dues** :—25 ore per ton.

Sweden—Pitea (*continued*).

Pro Forma Charges on a vessel of 1,100 tons from Kiel, and bound to Cardiff :—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Pilotage	87 00	80 00
Lastage dues at 10 ore	110 00	110 00
Light dues at 25 ore	275 00	275 00
Customs passport	—	1 00
Tonnage dues at 3 ore	—	33 00
Harbour dues at 8 ore	44 00	44 00
Quay dues at Munksund, 16 ore	—	176 00
Custom officers' visit	15 50	—
" " overtime	10 00	—
Stevedore, 700 standards at 2.25 kr.	—	1,575 00
Mooring boat	—	10 00
Tugboat	—	75 00
Steam launch attendance	—	15 00
Custom House overtime	10 00	10 00
Postages, telegrams and petties	—	10 50
Commission for clearance	50 00	50 00
	601 - 50 +	2,464 50 =
		Kr. 3,066 = £170 6s. 8d.

RATAN.

Ratan is in lat. 64°0' N., long. 20°50' E.

Population.—80.

Exports.—Deals, battens, and boards.

Accommodation.—The depth of water at the entrance to the harbour averages 18 ft., with S. wind rather more, and with N. wind rather less. There are no spring tides. Nearest station Umea. There is a private quay 330 ft. long.

Pilotage.—Compulsory only for direct sailings to or from abroad. Same rate for sailers and steamers ; single rate about 5 kr.

Port Charges.—Custom House Charges for watchman, 2 kr. 50 ore per day. There are no harbour dues here. For other charges see **Sikea**.

RONEHAMN.

Ronehamn is in lat. 57°10' N., long. 18°29' E.

Population.—About 200.

Imports.—Coal and manure.

Exports.—Timber and stone.

Accommodation.—Ronehamn has two entrances, the southern only suitable for small craft drawing 10 ft. at most, and the eastern, which is the most convenient and roomy, admitting vessels drawing 15 or 16 ft. to the roadstead, which is sheltered from all winds and weather. There is good anchorage from the roadstead to the loading wharf, at the outward end of which there is usually 14 ft. of water. There is a new stone quay with rails so that cargoes can be discharged direct into railway wagons. Railway connections with Wisby and other harbours two or three times a day.

Pilotage.—Compulsory for all vessels coming from abroad, except those under 40 reg. tons : 100 tons, 7 kr. ; 200 tons, 10 kr. ; 300 tons, 13 kr. ; 400 tons, 16 kr. Pilots to be had on the spot.

Port Charges.—Harbour Dues :—10 ore per reg. ton in, and the

Sweden—Ronehamn (continued).

same out. **Light Dues** :—25 ore per reg. ton in, and the same out (payable four times a year). **Tonnage Dues** :—10 ore per reg. ton (paid on entrance with cargo each voyage, and for going out only once a year).

Fro Forma Charges on a vessel of 200 reg. tons :—

	Kr.	ore.
Tonnage dues, 10 ore per reg. ton (paid on entrance with cargo for each voyage, and for going out only once a year), voyage in and out	40	00
Light dues, 25 ore per reg. ton (payable four times a year) one voyage in and out	100	00
Seamen's home, 3 ore per reg. ton, out	6	00
Brokerage, about	10	00
Pilotage, in and out, eastern entrance	26	00
Harbour dues, 10 ore per reg. ton, in and out	40	00
	222	00 = £12 6s. 8d.

RONNEBY.

Ronneby is in lat. 56°12' N., long. 15°20' E.

Population.—3,300.

Imports.—Coal, pig iron, and pyrites.

Exports.—Wood and stone.

Accommodation.—The entrance channel to the harbour is 200 ft. wide, and 17½ ft. deep, with quays on both sides. The anchorage in the outer road is in 23 to 25 ft. The N.W. quay is 672 ft. long, with 15½ to 16½ ft. alongside; the E. quay 672 ft. long, with a projecting wood pier 432 ft. long, 39 ft. wide, and with an average depth on both sides of 18 ft. There is railway connection with Karlskrona.

Pilotage.—For a steamer of 500 reg. tons, summer, 22 kr. in, and the same out; winter, 27 kr. in, and the same out.

Port Charges.—**Wharfage** :—12 ore per reg. ton in, and the same out. **Tonnage Dues** :—10 ore per reg. ton in, and the same out. **Harbour Dues** :—12 ore per reg. ton in, and the same out. **Light Dues** :—25 ore per reg. ton. **Manifest** :—3 kr. **Shipping Office Dues** :—3 kr. **Stamp** :—1 kr. **Clearance** :—60 kr. **Discharging** :—Coal, 75 ore per ton; pig iron, 75 ore per ton; pyrites, 65 ore per ton. **Loading** :—Wood, 2 kr. to 2 kr. 60 ore per standard. **Consular Fee** :—2s. 6d.

Pro Forma Charges on a steamer of 500 reg. tons, with a cargo of coal in, and wood out :—

	Kr.	ore.
Harbour dues at 12 ore per reg. ton, in and out	120	00
Brokerage	60	00
Pilotage, in and out	44	00
Tonnage dues	100	00
Light dues	250	00
Shipping office dues	15	00
Other charges	11	25
	600	25 = £33 7s. 0d.

Plus discharging and loading expenses.

SIKEA.

Sikea is in lat. 64°11' N., long. 20°59' E.

Population.—300.

Sweden—Sikea (*continued*).

Exports.—Deals, battens, boards, and wood-pulp.

Accommodation.—The harbour can be entered by vessels of 24 ft. draught under almost any circumstances. There are no spring tides. Nearest railway station, Umea.

Pilotage.—Only compulsory for direct sailings to or from abroad. Same rate for sailers and steamers; single rate about 5 kr.

Port Charges.—**Harbour Dues** :—About 16 ore per reg. ton with full cargo, or 8 ore with half cargo. **Clearance Fees** :—From 10 kr. to 50 kr., according to size. **Boat Hire** :—According to agreement. **Light Dues** :—25 ore per reg. ton in, and the same out. **Ballast** :—Discharging at the quay, 50 ore per ton; in lighters, about 2 kr. per ton; loading, the same. **Labour** :—2 kr. 50 ore to 3 kr. per day. **Stevedores** :—Deals, 2 kr.; battens, 2 kr. to 2 kr. 50 ore; boards, from 2 kr. 50 ore to 4 kr. 40 ore; floorings (boards), 2 kr. 50 ore to 3 kr. 90 ore; staves, 5 kr.; boxboards in bundles, 2 kr. 85 ore; splitwood, from 3 kr. 75 ore to 6 kr.; props, about 3 kr. per St. Petersburg standard. Pulp, 70 ore per ton; coal, 75 ore per ton. Overtime paid at the rate of 60 ore per hour per man. **Seamen's Home** :—3 ore per reg. ton. **Towage** :—From 25 to 50 kr.; seldom necessary.

Pro Forma Charges on a steamer of 1,193·13 reg. tons, arriving in ballast from a Russian port, and leaving with a cargo of wood-pulp for an English port, drawing 18 ft. loaded :—

	Kr.	ore.
Harbour dues, at 16 ore per reg. ton	190	90
Brokerage, 50 kr. in, and 50 kr. out	100	00
Pilotage, 60 kr. in, 64 kr. out	133	00
Boat hire	10	00
Tonnage dues, 10 ore in, and 10 ore out, per reg. ton	238	62
Stevedore, loading 1,300 tons of pulp	910	00
Seaman's home	35	79
Telegrams, etc.	15	00
Light dues, 25 ore in, and 25 ore out, per reg. ton	596	56

2,229 87 = £123 17s. 5d.

SIMRISHAMN.

Simrishamn, in lat. 55°35' N., long. 14°20' E., is situated on the east coast of Sweden, about 24 miles from Ystad.

Population.—2,000.

Import.—Coal.

Export.—Grain.

Accommodation.—The harbour is 1,170 ft. long, 585 ft. wide, with an entrance 72 ft. wide. Inside the harbour there is 13 to 14 ft., but on the anchorage a depth of 17 to 19 ft. This anchorage is not safe during winds from the E. A new and perfectly safe inner harbour, with a depth of 16½ ft., and a quay 1,346 ft. long, is in course of construction, and will be opened in 1909. The outer harbour is being deepened to 16½ ft., and as the water would, in the event of easterly gales, be rough, a gate with an opening 39 ft. in width will be closed for the protection of the inner harbour.

Port Charges.—Harbour dues, ballast, provisions, and water are very cheap.

Sweden.

SKELLEFTEA.

Skelleftea is in lat. $64^{\circ}45'$ N., long. $20^{\circ}58'$ E.

Population.—2,000.

Exports.—Timber, tar, and wood pulp.

Accommodation.—Vessels can only come as far as Ursviken harbour, belonging to Skelleftea, and situated at the mouth of Skelleftea river, about 14 kilometres ($8\frac{3}{4}$ miles) from the town. At Ursviken there is 19 ft. of water at the anchorage, and 16 ft. at the wharf.

Other loading places, sawmills, etc., within the district are Sävenäs (which has about 30 ft. of water), Ohrviken, Bureå, Kåge, Furögrund, and Abyn, with at least 20 ft. of water.

SKUTSKÄR AND HARNAS.

Skutskär (lat. $60^{\circ}39'$ N., long. $17^{\circ}23'$ E.) and Harnas (lat. $60^{\circ}38'$ N., long. $17^{\circ}20'$ E.) are two small ports, having the same entrance.

Import.—Coal.

Exports.—Wood goods and wood pulp.

Accommodation.—The entrance is a quarter of a mile wide, both harbours being closed by the breakwater of Harnas, which forms the new harbour, and the old point of Skutskär, where a small harbour light is erected, and at the inside of which, enclosed like a basin, lies the fine harbour of Skutskär. Immediately on passing the entrance ships have to steer for either harbour—Skutskär lying to the eastward about 1 mile, and Harnas to the westward the same distance. The Custom House for both places is at Skutskär, which is 9 miles S.E. of Gefle, and has been constructed with the object of conveying away the timber brought down the river Dal for shipment. To connect Skutskär with the forest districts a floatway has been cut from the sea to the Dal at Skutskär. Skutskär is open to vessels up to 19 ft. draught; it is safe and commodious, capable of containing 15 steamers and 10 sailing vessels, sheltered from all winds. Cargo is brought alongside in lighters.

Pilotage.—Pilots are stationed at Eggegrund, lying about 7 miles to the N.E. of both places.

Port Charges.—**Harbour Dues** :—16 ore per reg. ton. **Towage** :—There are several small steam-tugs, and the towage rate is low.

Pro Forma Charges on a steamer of 1,000 reg. tons, entering in ballast from a Swedish port, leaving with a cargo of 600 standards of deals, battens, and boards :—

	Kr.	ore.
Harbour pilot	5	00
„ dues	160	00
Pilotage, inwards, summer	35	00
„ outwards	35	00
Steam-tug, in and out	50	00
Stevedoring	1,550	00
Brokerage	75	00

1,910 00 = £106 2s. 3d.

SLITE.

Slite, or Slite Hamn, in lat. $57^{\circ}41'$ N., long. $18^{\circ}49'$ E., is on the east coast of the island of Gothland.

Import.—Coal.

Exports.—Timber and lime.

Accommodation.—Slite is a safe harbour, and offers peculiar advantages to vessels that are windbound. The roadstead is 27 to 28 ft. deep, and the depth at the entrance of the port is $20\frac{1}{2}$ to $21\frac{1}{2}$ ft. The depth at the quayside is $13\frac{1}{2}$ to $14\frac{1}{2}$ ft., and at the new quay $16\frac{1}{2}$ ft. The entrance is easy, and 150 vessels can be accommodated in the outer harbour, and a few small ones in the inner harbour. Coal can be loaded alongside the pier with dispatch. Provisions are abundant and moderate in price.

Pilotage.—Summer, 201 to 300 tons, 13 kr. ; 301 to 400 tons, 16 kr. Winter, 201 to 300 tons, 16 kr. ; 301 to 400 tons, 19 kr. Pilots can always be obtained.

Port Charges.—Tonnage Dues :—3 ore per ton. **Light Dues :—**In and out, 25 ore per ton each way. Vessels coming from Swedish, and bound for foreign, ports, have no light dues to pay (see **Sweden**). **Harbour Dues :—**Coaster, 7 ore per ton ; foreign, 10 ore per ton. **Discharging Ballast :—**12 to 15 kr. for about 30 tons.

Pro Forma Charges on a brig of 171 reg. tons, loading part cargo at Wisby, and finishing loading at Slite :—

	Kr.	ore.
<i>Wisby—</i>		
Tonnage dues, in and out	34	20
Light " "	85	50
Stamp to passport	1	00
Pilotage, inwards	12	50
30 tons ballast, put on board	6	00
Harbour master	6	00
Customs officer on board	2	50
Brokerage, in and out	40	00
<i>Slite—</i>		
Customs charges	23	08
Loading 70 standards	86	59
Pilotage, in and out	27	30

324 67 = £18 0s. 9d.

Expenses on a steamer would be the same.

SODERHAMN.

Soderhamn, in lat. 61°18' N., long. 17°3' E., is 48 miles north of Gefle.

Population.—11,118.

Exports.—Iron, wood, and wood-pulp.

Accommodation.—Vessels drawing 14 ft. can go up to the city of Soderhamn, but if drawing more must discharge at Stugsund, two miles from the city. Stugsund is 7 miles from the sea at Lille Jungfrun, and can be entered by vessels drawing 19 and sometimes 20 ft. of water ; length of quayage, 3,400 ft. ; depth alongside, 16 to 20 ft. A new stone quay has been constructed at Stugsund, 535 ft. long. Good anchorage at Branthäll roads, sheltered from all winds, available for vessels drawing up to 22 or 23 ft. There is a patent slip with a lifting power of 1,000 tons. Repairs can be executed, as there are two wooden shipbuilding yards and a foundry.

Pilotage.—Pilots can be obtained from a motor cutter.

Port Charges.—Harbour Dues :—Vessels coming from a Swedish port empty, 7 ore per reg. ton ; with cargo, 10 ore per reg. ton ; vessels

Sweden—Soderhamn (continued).

coming from a foreign port, 10 ore per reg. ton; and the same charges outwards. **Stowing**:—Charge varies from 1 kr. 75 ore to 3 kr. per standard, according to cargo. **Discharging**:—Cargo, 80 ore per ton. **Ballast**:—1 kr. per ton. **Tugboats**:—If needed, at reasonable prices. **Light Dues**:—25 ore. per reg. ton in, and the same out.

Pro Forma Charges on an English steamer of 1,453 tons, arriving from a foreign port in ballast, bound to a foreign port with cargo:—

	Kr.	ore.
Pilotage, inwards	44	00
„ outwards	44	00
Last dues, inwards	145	30
„ „ outwards	145	30
Light dues, inwards	363	25
„ „ outwards	363	25
Custom House passport	1	00
Harbour dues	290	60
Seamen's house	43	59
Cash to captain	30	00
Postage, telegram, telephone, etc.	17	60
Steamboat	85	00
Harbour pilot to Källskär, inwards	43	00
Custom House officer, inwards	10	00
„ „ outwards	6	40
Doctor	6	40
Harbour money in Källskär	116	24
Petty expenses	5	00
Consular fees	2	27
Stevedore's bill	1,809	85
Ship-chandler's bill	173	70
Towing of cargo to Källskär	16	50
Forms of bills of lading	3	50
Provision for clearing	100	00
	3,865	75 = £214 15s. 2d.

Pro Forma Charges on a sailing vessel of 300 tons, arriving from a foreign port in ballast, bound to a foreign port with cargo:—

	Kr.	ore.
Pilotage—inwards, 19 kr.; outwards, 19 kr.	38	00
Lastage dues inwards, 10 ore per ton	30	00
„ „ outwards, 10 ore per ton	30	00
Lighthouse dues, inwards, 25 ore per ton	75	00
„ „ outwards, 25 ore per ton	75	00
Harbour dues, in and out, 20 ore per ton	60	00
Seamen's house, 3 ore per ton	9	00
Harbour pilot, 1 kr. per 100 tons	3	00
Custom House officer, 5 kr.; petty expenses, 3 kr.	8	00
	328	00 = £18 4s. 5d.

OUTPORTS.

Mariehill and **Grundvik**, about 3 or 4 cable lengths from Stugsund, have good harbours and the same depth of water as Stugsund.

Asbacka, about 2½ English miles from Stugsund, has a good harbour with 19 ft. of water.

Sandarne, in lat. 61°15' N., long. 17°11' E., about 5 miles from Stugsund, has a good harbour with 19 ft. of water.

Källskär, about 5 miles from Stugsund, has a good harbour with 19 ft. of water.

Langplagan has a good harbour, with 18 ft. of water. Export, pit-props.

Langvind, in lat. 61°28' N., long. 17°8' E., is about 12 miles N. of Soderhamn. The harbour is good and safe, with 13 ft. of water, but the entrance

Sweden—Soderhamn (*continued*).

is very difficult and narrow. Vessels bound for Langvind must first enter Soderhamn to get the ship cleared.

Langror, about 6 miles from Soderhamn, has a good harbour, with 18 ft. of water. It is perfectly landlocked.

The expenses at all outports are about the same as at Soderhamn except Källskär, where vessels have to pay extra harbour dues, 16 ore per reg. ton, for cargo taken in.

SODERKÖPING.

Soderköping is in lat. 58°29' N., long. 16°20' E., and is 25 miles from the sea at the entrance of the Gotha Canal.

Population.—2,100.

Accommodation.—There is a good channel enabling vessels of 15 ft. draught to reach Mem, the harbour of Soderköping, where they can anchor in from 3 to 8 fathoms.

SODERTELJE.

Sodertelje is in lat. 59°13' N., long. 17°37' E.

Population.—5,000.

Accommodation.—Sodertelje is on the canal leading to the Great Mälaren Lake; it is 30 miles from the sea, the channel leading up to it being a straight one. The depth at the entrance of the port is 19½ ft.; depth in the port, 16 to 32 ft.; depth alongside the outer harbour quays, 17½ ft.; length of quay, 160 ft.

Oljebruket Quay has 21½ ft. alongside.

The Public Quay is about 800 ft. long, but cannot be reached by vessels drawing over 12 ft. There is good anchorage in the port. There is a canal between Mälaren and the Baltic, 1 mile long, available for vessels 130 ft. long, drawing 10 ft. 8 in., and with 28 ft. 3 in. beam.

SÖLVESBORG.

Sölvesborg is in lat. 56°4' N., long. 14°35' E.

Population.—2,600.

Imports.—Coal and clay.

Exports.—Black granite, kaolin, fire bricks, and wood.

Accommodation.—There is a depth of water of 17 ft. There is a dry dock here, with a length of 285 ft., a breadth of 44½ ft., and a depth on the sill of 14½ ft. In the outer roads there is a quay 300 ft. long connected with the town by rails, and fitted with a crane to lift 15 tons. The length of public quays in the inner roads is about 1,500 ft., fitted with three cranes to lift from 6 to 15 tons each. Railway connections with the whole of the country. Provisions and fresh water are obtainable. Good tugboat, belonging to the harbour, at moderate price.

Pilotage.—Compulsory, five times for sailing vessels, and ten times for steamers, when coming from foreign ports, yearly. From April 1 to September 15—Up to 100 tons, 7 kr.; 101 to 200, 10 kr.; 201 to 300, 13 kr.; 301 to 400, 16 kr.; 401 to 500, 19 kr.; 501 to 600, 22 kr.; 601 to 700, 25 kr.; 701 to 800, 28 kr.; 801 to 900, 31 kr.; 901 to 1,000, 34 kr.; 1,001 to 1,500,

Sweden—Sölvesborg (continued).

37 kr. ; 1,501 to 2,000, 40 kr. ; over 2,000, 43 kr. From September 15 to April 1—Up to 100 tons, 8 kr. ; 101 to 200, 12 kr. ; 201 to 300, 16 kr. ; 301 to 400, 19 kr. ; 401 to 500, 23 kr. ; 501 to 600, 27 kr. ; 601 to 700, 31 kr. ; 701 to 800, 34 kr. ; 801 to 900, 38 kr. ; 901 to 1,000, 42 kr. ; 1,001 to 1,500, 46 kr. ; 1,501 to 2,000, 49 kr. ; over 2,000, 53 kr. Rates are the same in and out.

Port Charges.—Entrance Fees :—9 ore per reg. ton for Swedish vessels ; 12 ore per reg. ton for foreign vessels. **Clearance Fees :—**According to agreement. **Light Dues :—**25 ore per reg. ton (payable by sailing vessels four times a year, and by steamers eight times a year). **Ballast :—**1 kr. 25 ore per ton. **Tonnage Dues :—**Sailing vessels and steamers, 10 ore per reg. ton in, and the same out, once a year. If the vessel brings foreign cargo, she pays 10 ore per reg. ton in, every time, but goes out free after the first payment.

Pro Forma Charges on a steamer of 770 reg. tons, with a cargo of 1,300 tons of coal in, and going to a Swedish port to load wood for England, drawing 16 ft. loaded :—

	Kr.	ore.
Harbour dues, at 21 ore per reg. ton	161	70
Brokerage	75	00
Pilotage, in and out	56	00
Towage	20	00
Boat hire	5	00
Light dues, 385 kr. ; tonnage dues, 154 kr.	539	00
Customs stamp, 1 kr. ; shipping office dues, 23 kr. 70 ore	24	70
Labourage, 65 ore per ton, about 1,300 tons of coal	845	00
Custom House for overtime, 9 kr. ; petty expenses, 10 kr.	19	00

1,745 40 = £96 19s. 4d.

STILLERYD.

Stilleryd is 3 miles west of Carlshamn, by water 5 miles. It is a newly built harbour, small but very safe ; vessels drawing more than 15 ft. are not able to enter.

Pilot must be obtained from Carlshamn.

STOCKHOLM.

Stockholm is in lat. 59°20' N., long. 18°1' E.

Population.—337,460.

Imports.—Coal, grain, phosphate, and herrings.

Exports.—Wood, iron, steel, and pulp.

Accommodation.—The harbour of Stockholm can accommodate a large fleet in addition to the merchant vessels that usually visit the port, there being good anchorage as far as Sjötullen. The public quays are 31,250 ft. long, with a depth up to 23 ft. alongside, but general cargoes must be discharged at the Custom House quays, where there is not room for more than about 30 vessels to discharge at the same time. Vessels are allotted places at the quay in the order in which their arrival is notified to the harbour master. There is 3,700 ft. of private quayage, with a depth alongside up to 22 ft.

The depth of water in the harbour varies from 5 to 16 fathoms, but in some of the bays, and near some parts of the shore the depth of water is from 12 to 22 ft. The depth at the entrance is 25½ ft.

Sweden—Stockholm (continued).

Oxdjupet, about 8 miles northwards of Stockholm, is the passage which determines the draught of vessels bound for this port. The highest water-line at Oxdjupet is from 22 to 23 ft., but, in consequence of the sudden bends in the passage, it is not safe, especially for vessels of great beam and much length, to attempt to pass with a greater draught than 22 ft.

The lock which connects Lake Mälaren with the sea is 148 ft. in length, 31 ft. in breadth, and has a depth of 13 ft. The length of the lock with one set is 185 ft.

The following are the dimensions of the dry docks, etc. :—

Admiralty dry dock	is 397 ft. long over all, 58 ft. wide at entrance, 22½ ft. on the sill.
Ostra dry dock	„ 340 „ „ 55 „ 17 „ „
Vestra dry dock	„ 330 „ „ 35 „ 11 „ „
Pontoon (C. and S. type)	is 240 ft. long docking space, 50 ft. wide at entrance, 19 ft. on the blocks, lifting power 2,200 tons.

There are three patent slips to raise 1,500, 430, and 280 tons respectively.

The shipyards at Bergsund, Finnboða, Beckholmen, and Djurgården are fully equipped with necessary machinery and cranes, so that they are capable of dealing with the heaviest class of work and repairs.

On the public quays there are numerous cranes :—One 30 ton ; one 10 ton ; one 8½ ton ; one 5 ton ; two 3½ ton ; four ½ ton ; five 5 ton (electric). On the private quays there is one 40 ton sheers. The stevedoring companies also possess four steam cranes to lift 1 ton each, ten floating cranes to lift 3 tons each, and one to lift 15 tons.

At Värtan there is a special arrangement for discharging coal for the State railways. The mills have elevators for discharging grain, and there is also a floating elevator for discharging purposes.

Coal for the State railway is discharged at Värtan alongside the quay. Coal for the gasworks is discharged at Ropsten or at Värtan alongside the quay. Coal for coal merchants is discharged either at private quays or in lighters, in which case vessels are moored in the harbour.

The depth alongside the quays in Stadsgården varies from 19 to 20 ft. ; the depth alongside the quays at Värtan varies from 19 to 21 ft. ; the depth alongside the quays at Ropsten gasworks is 21 ft.

The entrance from Sandhamn is the shortest and straightest, and therefore the easiest and cheapest passage to Stockholm. The navigation is kept open during the winter by a powerful ice-breaker.

The Custom House hours for discharging and loading are : 6 a.m. to 6 p.m. from March 1 to October 1 ; 7 a.m. to 6 p.m. from October 1 to March 1.

Time Signals.—Chronometers can be checked. A black ball, with white horizontal stripes, is hoisted half way up the mast, on the School of Navigation, 5 minutes before the signal. The ball is hoisted close up 2 minutes before, and dropped at noon Greenwich mean time, equal to 1 h. 0 m. 0 s. Swedish mean time, and 1 h. 12 m. 18.9 s. local mean time.

Pilotage.—Compulsory. Rates according to the tonnage of vessels. —From April 15 to September 16, the charges on a vessel of 500 to 600 tons, from the sea at Sandhamn to Stockholm, would be about 49 kr. ; on a vessel of 1,000 to 1,500 tons, about 81 kr. Winter, about 25 per cent. more.

Port Charges.—Harbour Dues :—Vessels coming from or going to a foreign port, 10 ore per ton each way. For steamers visiting the harbour five times a year, the dues are reduced to two-fifths, but the vessels have to be

Sweden—Stockholm (continued).

advertised as regular traders. Vessels passing the harbour, without landing or receiving passengers or goods, pay one-half of the above rates, coming in. Vessels calling at the port for repairs are exempt from harbour dues. **Light Dues** :—Vessels with cargo or in ballast, 25 ore per ton in, and the same out ; steamers having paid light dues eight times, and sailing vessels four times during the same calendar year, are exempt from light dues during the remainder of that year. **Tonnage Dues** :—Vessels arriving, for each voyage, 10 ore per ton. Vessels departing, only for the first voyage during the same year, 10 ore per ton. **Lock Dues** :—For vessels arriving from or sailing to foreign ports, 10 ore per ton. For a vessel loaded to one-third of her tonnage, an additional charge of 50 per cent. is made.

Labourage :—For discharging, including cost of landing and separating the goods ashore :—

	Kr. ore.
Bone meal	1 70 per ton.
Cement	1 40 "
Fodder cakes, loose	2 50 "
Plaster of Paris	1 40 "
Iron girders	1 90 "
Scrap iron, loose	2 50 "
Scrap iron, in bundles	1 60 "
Cork in bales	0 15 per bale.
Mediterranean cargo	1 80 per ton.
Potatoes	1 40 "
Rails	1 70 "
Pipes, small	1 70 "
" large, 35 cm. inner diameter	2 50 "
Herring	1 40 "
General cargo	1 60 "
Sulphur in sacks	1 70 "
Pig-iron	1 40 "
Fire-bricks	1 70 "
Bricks and pan-tiles	2 00 "

For discharging only :—

	Kr. ore.
Cotton, in bales	1 50 per ton.
Cement	0 75 "
Fodder cakes, loose	1 25 "
Phosphate rock	0 85 "
Log wood	1 50 "
Oats	1 00 "
Scrap-iron	1 75 "
Bran, loose	1 30 "
Bran, in sacks	0 85 "
Coke	1 35 "
Pipeclay	0 85 "
Marble	1 50 "
Potatoes, in sacks	0 75 "
Rails	0 75 "
Pipes, small	1 00 "
" large, 35 cm. inner diameter	1 25 "
Salt	0 80 "
Saltpetre in sacks	0 90 "
Herring	0 70 "
Sugar, in sacks	0 75 "
Grain, loose	0 75 "
" trimming to elevator	0 40 "
Coal	0 80 "
Iron pyrites	0 85 "
Sulphur, loose	1 10 "
Pig-iron	0 75 "
Liquids	1 00 "
For discharging and landing on spars ; full cargo cement	1 20 "

When weighing phosphate rock and iron pyrites on board, extra 5 ore per ton. For discharging outside the usual harbour limits, the above rates

Sweden—Stockholm (*continued*).

are raised 5 ore per ton. For discharging at Bröderna Ameln's salt hulk, an extra cost of 15 ore per ton is made for rigging stages, or 3 kr. per hour for the hire of the pontoon crane. If the consigner in the charter party is exempt from paying measuring, the price for the vessel is raised 15 ore per ton. For loading :—

	Kr. ore.
Boards	4 00 per std.
Feldspar from lighter	0 85 per ton.
Oats without tramping	0 10 per quarter.
Iron from quay or lighter	1 00 per ton.
Scrap iron	1 75 „
Cork in bales	0 15 per bale.
Ore from lighter	0 85 per ton.
Pulp	1 00 „
Pit-props	3 25 per std.
Deals and battens	3 50 „
Slag from lighter	0 85 per ton.
Joinery	4 00 per std.
Spars, Egyptian	5 00 „
General cargo from quay	1 30 per ton.
Timber, round	5 50 per std.

Trimming feldspar, ore, and slag to be paid by the hour. Overtime and night work, as well as Sundays and holidays, to be paid at the rate of 75 ore per man per hour. Transport of labourers to and from the different wharves to be paid by the vessel.

Insurance of labourers, 2 per cent. on the cost of discharging, to be paid by the vessel.

Dock Charges.—Beckholmen.—Entering the dock ; vessels of 100 gross tons and under, 80 kr. ; for each additional gross ton, over 100 tons, 3 kr. Charges for vessels in dock per day, 8 ore per ton (not less than 12 kr.) ; charge for extra pumping out of large dock, 100 kr. ; charge for extra pumping out of each of the small docks, 50 kr.

Steam-tug Charges.—

	REGISTER TONS.							
	100.	200.	300.	400-500.	600-800.	900-1,000.	1,000-1,500.	2,000.
	kr.	kr.	kr.	kr.	kr.	kr.	kr.	kr.
From Sandhamn to Stockholm.	75	105	135	165	215	265	350	400
„ Dalaro „	95	130	145	175	225	300	400	450
„ Landsort „	140	195	215	265	315	365	450	500
„ Hufvudskar „	115	145	165	215	265	315	400	450
„ Arholma „	95	115	145	175	215	265	350	400

Pro Forma Charges on a steamer of 1,200 reg. tons, coming from and bound for a foreign port :—

	Kr. ore.
Pilotage in, from Sandhamn (in winter, 25 per cent. additional)	91 00
„ out, to Sandhamn	81 00
Harbour pilot and boatmen	30 00
Tonnage dues, inwards	120 00
„ dues, outwards	120 00
Lighthouse dues, inwards	300 00
„ „ outwards	300 00
Town dues, inwards	120 00
„ „ outwards	120 00
Hospital dues	12 00
Shipping office duty	36 00
Custom House passport	1 00
Commission for clearing in and out	100 00

1,431 00 = £79 10s. 0d.

Sweden—Stockholm (continued).

Pro Forma Charges on a steamer of 500 British (650 Swedish) net reg. tons, arriving from and bound for a foreign port :—

	Kr.	ore.
Pilotage in from Sandhamn	51	00
" out to Sandhamn	15	00
Harbour pilot	65	00
Tonnage dues, inwards, 10 ore per reg. ton	162	50
" " outwards (once a year), 10 ore per reg. ton	65	00
Lighthouse dues inwards, 25 ore per reg. ton	162	50
" " outwards, 25 ore per reg. ton	65	00
Harbour dues inwards, 10 ore per ton	65	00
" " outwards, 10 ore per ton	19	50
Shipping office duty, 3 ore per reg. ton	6	50
Hospital dues, 1 ore per reg. ton	1	00
Custom House passport	20	00
Tow-boat charges (if used) (about)		
Stevedore, discharging 700 tons coal at 80 ore ; 300 tons general cargo at 70 ore	770	00
Stevedore, loading 600 tons iron at 1 kr. ; 400 tons general cargo at 60 ore	840	00
Custom House officers' overtime, manifest, etc. (about)	30	00
Commission for clearing in and out	60	00
	2,467	00 = £137 1s. 2d.

STRÖMSTAD.

Strömstad is in lat. 58°58' N., long. 11°11' E.

Population.—About 3,000.

Imports.—Coal and bricks.

Exports.—Granite, pit-props, and herrings.

Accommodation.—The harbour is spacious, well sheltered, and easy of access. There is a patent slip and mechanical workshop. There are several public piers. The depth at the steamboat pier in the inner harbour is 13 ft. 9 in. Anchorage in the inner harbour is in 36 ft. ; and south of Långö in 60 to 90 ft. There are variations up to 3 ft. in the water level. In the south harbour at Torskolmen a new quay is being constructed for vessels drawing 10 to 11 ft.

Pilotage.—Compulsory.

Port Charges.—**Wharfage** :—6 ore per reg. ton for foreign vessels, and 4 ore per reg. ton for Swedish vessels, in, and the same out. **Clearance Fees** :—10 to 25 kr., according to the size of the vessel. **Towage** :—As per agreement. **Light Dues** :—25 ore per reg. ton in, and the same out. **Labour** :—30 to 50 ore per hour. **Brokerage** :—3 per cent. on the freight. **Tonnage Dues** :—10 ore per reg. ton in, and the same out. **Shipping Office Dues** :—3 ore per reg. ton out.

Pro Forma Charges on a steamer of 200 reg. tons, with a cargo of coal in, and ballast out :—

	Kr.	ore.
Harbour dues at 6 ore per reg. ton	24	00
Brokerage	15	00
Pilotage in and out, summer tax	40	00
Light dues	100	00
Tonnage dues	40	00
Shipping office dues	6	00
	225	00 = £12 10s. 0d

Sweden.

SUNDSVALL.

Sundsvall is in lat. $62^{\circ}23'$ N., long. $17^{\circ}16'$ E.

Population.—16,227 in the town, and about 40,000 at the loading places in the district.

Imports.—Grain, flour, oil, sugar, coffee, etc.

Exports.—Wood and pulp.

Accommodation.—The harbour is large, and from $12\frac{1}{2}$ to 21 ft. deep. Vessels are quite safe from every wind. The anchorage is in 5 to 20 fathoms of water. There are large and commodious quays, 3,120 ft. long for discharging, accessible for vessels up to 21 ft. draught. Loading wood and iron is generally performed from lighters, and the ships are moored to dolphins aft, with their anchors forward. There is also a shipbuilding yard for building and repairing wooden vessels, and ironworks for the repair of machinery, etc. There is a patent slip to take vessels 137 ft. long with 11 ft. draught.

By railway Sundsvall is in direct communication with Stockholm, Malmö, Gothenburg, Boden near Luleå, Christiania, Narvik, and Drontheim, to which places there are daily trains. During the summer there are also regular lines of steamers to Stockholm, Stettin, Copenhagen, Lübeck, Hamburg, St. Petersburg, and Wasa, as well as along the coast up to Haparanda.

Pilotage.—Pilots are obtainable at Bremsö and Östholm. The signal for the same is a flag on the fore-topmast, and at night a white or blue light. On the N.E. point of Bremsö there is a lighthouse, and close to the same a black globe with a white belt is shown when pilots are to be had. They meet vessels about 1 to 2 miles off.

Pilotage Charges are per reg. ton, according to tariff and distance, with about 25 per cent. added during the winter months, September to April inclusive.

Port Charges.—Steam-tug Charges:—According to agreement, but about 20 to 60 kr. inwards and about 40 to 80 kr. outwards. **Harbour Dues:**—8 ore per reg. ton inwards, and the same outwards; if the vessel arrives from or is bound to an inland port this charge is only 6 ore per reg. ton, each way. At the small loading places the harbour dues are 16 ore per reg. ton, and if a vessel is loading at such a place within the port, i.e., at Petersvik, Örtviken, Hefners, Rosenborg, Mon, Windskar, or Kubikenborg, she has to pay both these dues, i.e., both to the port and to the loading place. But if a vessel loads at any other place in the district, she is exempt from the dues to the port, and consequently pays only 16 ore to that loading place.

Tonnage, Light, and Shipping Office Dues:—See Sweden.

Stevedore Charges.—Loading 35 to 40 ore per standard for the stevedore alone on sailing vessels. For stevedore with a full gang of men, 1 kr. 50 ore to 3 kr. 50 ore per standard for deals, battens, boards, or timber; iron, 50 to 60 ore per ton; discharging, 50 to 70 ore per ton. Labourers, 2 kr. 50 ore to 4 kr. 50 ore a day, depending on the kind of work and the time of year.

Ballast.—Stone, 2 kr. to 2 kr. 25 ore per ton, free alongside.

Broker's Commission for Clearing:—

	Kr.	ore.
Vessels up to 70 tons reg.	20	00
„ from 71 to 100 tons reg.	25	00
„ 101 „ 130 „	30	00
„ 131 „ 190 „	40	00

Sweden—Sundsvall (continued).

Vessels from 191 to 250 tons reg.	Kr. ore.
„ „ 251 „ 350 „	50 00
„ „ 351 „ 450 „	60 00
„ „ 451 „ 550 „	70 00
„ „ 551 „ 650 „	80 00
„ „ 551 „ 650 „	90 00
„ above 650 tons	100 00

Half in and half out. Arriving from an inland port, one quarter for inward only.

Commission.—For procuring freight: Voyages between Europe and Transatlantic ports, $1\frac{1}{2}$ per cent.; Mediterranean or Black Sea, 2 per cent.; other ports, 3 per cent. on the gross amount of freight. Collecting freight: $\frac{1}{2}$ per cent. from Transatlantic ports, and 1 per cent. from others.

Pro Forma Charges on a sailing vessel of 400 tons reg. from Newcastle with coal, discharging at Sundsvall and loading wood at Svartvik for England:—

	Inward. Kr. ore.	Outward. Kr. ore.
Pilotage from Bremo to Sundsvall	22 00	—
„ „ Sundsvall to Svartvik	9 00	—
„ „ Svartvik to sea	—	21 00
Tonnage dues	40 00	40 00
Light money	100 00	100 00
Custom House passport	—	1 00
Harbour dues at Sundsvall	64 00	—
„ „ at Svartvik	64 00	—
Shipping-office dues	12 00	—
Towage to Sundsvall	30 00	—
„ „ Svartvik	25 00	—
„ „ sea	—	40 00
Stevedore, for loading 200 standards at 40 ore	—	80 00
Commission for clearing	35 00	35 00
	401 00 + 317 00 =	Kr. 718 = £39 17s. 9d.

The same vessel coming back a second time in ballast to load at Svartvik for England is exempted from tonnage dues and harbour dues at Sundsvall, but has to pay for discharging ballast, say 150 tons at 40 ore=60 kr., and consequently her expenses are 80 kr. less.

Pro Forma Charges on a steamer of 700 tons reg. arriving from Swinemunde in ballast and loading wood at Kubikenborg for Spain:—

	Inward. Kr. ore.	Outward. Kr. ore.
Pilotage from Bremo to Sundsvall	35 00	—
„ „ Sundsvall to Kubikenborg	16 00	—
„ „ Kubikenborg to sea	—	35 00
Tonnage dues	70 00	70 00
Light money	175 00	175 00
Custom House passport	—	1 00
Shipping-office dues	21 00	—
Harbour dues at Kubikenborg and for Sundsvall	224 00	—
Spanish Consul's fees	—	16 80
Stevedore, for loading 350 standards deals, at 2 kr.	700 00	—
Commission for clearing	50 00	50 00
	1,291 00 + 347 80 =	Kr. ore. 1,638 80 = £91 0s. 11d.

The same steamer, after having made three voyages to Sweden in the same calendar year, loading at Wifsta Wharf in the month of September or October for any foreign port:—

Sweden—Sundsvall (*continued*).

	Inward. Kr. ore.	Outward. Kr. ore.
Pilotage from Bremo to Wifsta Wharf, via Sundsvall	64 00	—
Pilotage from Wifsta Wharf to sea	—	47 00
Custom House passport	—	1 00
Shipping-office dues	21 00	—
Harbour dues at Wifsta Wharf	112 00	—
Stevedore, for loading 330 standards of boards, at 2 kr. 25 ore	742 50	—
Commission for clearing	50 00	50 00
	989 50 +	98 00 =
		Kr. ore. 1,087 50 = £60 8s. 4d.

The following loading places are situated in the Custom House district of Sundsvall :—

Akerviken.	Galstrom.	Myrnas.	Soraker.
Alafors.	Gustafsberg.	Nacka.	Sorvik.
Alvik.	Gustafshamn.	Nas.	Strand.
Ankarsvik.	Heffners.	Nyhamn.	Strandvik.
Aviken.	Hofvid.	Nyvik.	Sund.
Bergvik.	Horningsholm.	Ortviken.	Svartvik.
Bolestrand.	Johannedal.	Ostrand.	Tunadal.
Bondhamn.	Johannesnäs.	Pedersaker.	Utvik.
Carlsvik.	Juniskar.	Petersvik.	Vaple.
Eriksdal.	Klampenborg.	Rockland.	Vindskar.
Essviken.	Korstavik.	Rodestrand.	Vu.
Fagervik.	Kubikenborg.	Rosenborg.	Wifsta Wharf.
Framnas.	Mon.	Skonshamn.	
Furuskar.	Muggjardsvik.	Skonvik.	

Vessels arriving from foreign ports and bound to one of these places have to call at Sundsvall to clear in, except those bound to Svartvik and Wifsta Wharf, to which two places they can go direct if in ballast, but if with cargo they must also go to Sundsvall.

They are all good and safe ports, and have sufficient water for the largest vessels, except Bondhamn, Galstrom, Furuskar, Muggjardsvik, and Aviken, of which Furuskar and Galstrom are safe for vessels up to 18 ft., and Bondhamn, Muggjardsvik, and Aviken are only for smaller vessels. The anchorage at most of these places is on clay and mud.

TRELLEBORG.

Trelleborg, in lat. 55°22' N., long. 13°9' E., is about 22 miles east of Cape Falsterbo.

Population.—3,000.

Imports.—Coal, coke, bran, wheat, rye, salt, oilcake, etc.

Exports.—Barley, wheat, sugar, molasses, bricks, flour, etc.

Accommodation.—There is 19½ ft. of water on the bar and in the harbour at quayside. The depth will be increased during 1909. The harbour has an area of more than 105,000 square yards; the quays are 3,280 ft. in length. The roadstead is a good refuge, with a splendid anchorage for vessels of any draught. The harbour is quite safe from all winds, and the traffic has, during the most severe winters, never been stopped by ice. Tug-boats are always kept in readiness. Regular mail and passenger steamer service to and from the Continent twice daily, in each direction. Four railways to the interior. There are two cranes belonging to the harbour commission.

Pilotage.—Government pilots, paid at sanctioned rates, meet the

Sweden—Trelleborg (continued).

vessels when the usual signal is given. Rates (loaded or ballasted).—Summer, in or out : Vessels from 201 up to 300 tons reg., 13 kr. ; 301 to 400, 16 kr. ; 401 to 500, 17 kr. ; 501 to 600, 22 kr. ; 601 to 700, 25 kr. ; 701 to 800, 28 kr. ; 801 to 900, 31 kr. ; 901 to 1,000, 34 kr. Winter, in or out : vessels from 201 up to 300 tons reg., 16 kr. ; 301 to 400, 19 kr. ; 401 to 500, 23 kr. ; 501 to 600, 27 kr. ; 601 to 700, 31 kr. ; 701 to 800, 34 kr. ; 801 to 900, 38 kr. ; 901 to 1,000, 42 kr.

Port Charges.—Harbour Dues :—Vessels from and to Swedish ports, 10 ore per reg. ton in, and the same out ; vessels from and to foreign ports, 14 ore per reg. ton in, and the same out. **Towage :—**10 ore per net reg. ton. Steamers calling for the purpose of coaling only are free from all harbour dues. **Labourage :—**About 4 kr. per day ; for whole cargoes, according to agreement with the stevedore. **Ballast :—**1 kr. 20 ore per ton, free on board. **Discharging Ballast :—**25 ore per ton.

Pro Forma Charges on a steamer of 1,281·04 reg. tons, with a cargo of 2,300 tons of coal, in from a foreign port, and water ballast out, coastwise :—

Lastage dues in,	128 kr. 10 ore ;	light dues in,	320 kr. 26 ore	Kr.	ore.
Harbour dues in,	179 kr. 34 ore ;	pilotage in,	37 kr. .	216	34
" " out,	128 kr. 10 ore ;	" out,	37 kr. .	165	10
Discharging cargo				1,495	00
Clearance in and outwards				75	00
				2,399	80 = £133 6s. 6d.

UDDEVALLA.

Uddevalla, in lat. 58°21' N., long. 11°58' E., lies 35 miles above Marstrand.

Population.—11,446.

Imports.—Coal, salt, petroleum, artificial manure, cotton, etc.

Exports.—Pit-props, oats, matches, paper, joinery, staves, feldspar, wood-pulp, etc.

Accommodation.—There is 40 to 50 ft. of water in the fiord. On the bar (2 miles distant) there is 24½ ft. of water, and in the harbour at the public quay 16 to 24½ ft. Vessels lie here quite safe from winds. There are excellent facilities for loading and discharging. The entrance from the sea to Uddevalla is from Marstrand ; the entrance channel is 98 ft. wide and 24½ ft. deep. There is also a shorter entrance by Malosund, but as this is so crooked, and there are often strong currents in the narrows, it is dangerous for vessels more than 130 ft. long. Fire and lights are allowed on board in the harbour. Provisions are cheap. A tugboat can be had.

Pilotage.—Compulsory. Pilots from Marstrand meet vessels in the neighbourhood of Paternoster light. The pilot station for entrance by Malosund is at Gullholmen.

Sea to Uddevalla—

Summer.	Winter.	Summer.	Winter.	Summer.	Winter.	Summer.	Winter.	Summer.	Winter.
1 to 200 reg. tons.]		201 to 300 r. tons.		301 to 400 r. tons.		401 to 500 r. tons.		501 to 600 r. tons.	
Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.
35	42	44	54	53	65	64	77	72	88

Uddevalla to Sea—

Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.
34	43	44	55	54	67	63	81	72	91

Port Charges.—Harbour Dues :—Vessels coming from and leaving

Sweden—Uddevalla (*continued*).

for a foreign port, 11 ore per reg. ton in, and the same out. Vessels coming from and leaving for a Swedish port, 8 ore per reg. ton in, and the same out. **Lastage and Tonnage Dues** :—10 ore per reg. ton in, and the same out; payable outwards once a year only, but inwards each time the vessel has cargo.—See **Sweden**. **Light Dues** :—25 ore in, and 25 ore out. **Shipping Office** :—3 ore per reg. ton. **Labourage** :—4 kr. per man per day. **Towage** :—As per agreement. **Ballast** :—1 kr. per ton delivered through a side port or on a stage hung on the ship's side. **Brokerage** is fixed according to law; for chartering, 3 per cent. commission.

UMEÅ.

Umeå is in lat. 63°50' N., long. 20°21' E. The town is at the head of the fiord, about 8 miles from the sea.

Population.—5,400.

Imports.—Coffee, potatoes, rice, flour, bone dust, etc.

Exports.—Deals, battens, boards, timber, and tar.

Accommodation.—There is a length of quayage here of 1,800 ft., with a depth of water alongside of 9 to 11 ft. The river affords only 10 to 12 ft. in places, but large vessels can enter the outer roads within the limits of Umeå harbour. Bottom of loose mud. Good anchorage inside of Bredskär. Small repairs can be executed.

Pro Forma Charges on a steamer of 1,000 Swedish reg. tons (first voyage in the year), arriving in ballast from a foreign port, and leaving with full cargo of 600 standards for a foreign port :—

	Kr.	ore.
Pilotage in, 11 ft.	44	75
„ out, 18 ft.	39	40
Tonnage duty, inwards	100	00
„ „ outwards	100	00
Lighthouse dues, inwards	250	00
„ „ outwards	250	00
Custom House passport	1	00
Harbour dues, inwards and outwards	160	00
Shipping office duty	30	00
Consul's fee	2	25
Stevedore, 600 stds. deals and battens at 2 kr.	1,200	00
Custom House survey during loading and after Custom House hours	20	00
Custom House officer for visitation	10	00
Messenger for clearing and for pilot	10	00
Commission for clearing in and out	100	00

2,317 40 = £128 14s. 9d.

The following ports are in the Umeå district :—

Jernas, depth of water, 23 ft. Vessels clear at Mo.

Rundvik, any depth. Vessels clear at Nordmaling Custom House.

Djupvik Quay, depth of water, 15 ft. } Pilots to be obtained at Bredskär. Vessels clear at Umeå town.

Obbola, depth of water, 20 ft. 2 in. }

Sandvik, depth of water, 20 ft. 2 in. }

Kas, depth of water, 15 ft., in West Gvasken. Pilots to be obtained at Bredskär.

Dalkarlsa (Marieberg), depth of water, 19½ ft. }

Gumboda, depth of water, 26 ft. }

Kallviken, depth of water, 10 ft. }

Vessels clear at Sikea.

Sweden.

VALDERMARSVIK.

Valdemarsvik is in lat. 58°12' N., long. 16°38' E.

Exports.—Oats, pit-props, timber, and pig-iron.

Accommodation.—It is a safe harbour for vessels of 14 ft. draught. Those of larger draught can complete their loading about 6 miles from the town, where there is 20 to 25 ft. of water. Provisions can be obtained at reasonable prices.

Pilotage.—Pilots are obtained at Haradskar lighthouse, or at Boko pilot station.

Pro Forma Charges on a steamer of 273 reg. tons, ballast in and oats out, drawing 9 ft. in., and 13 ft. out :—

	Kr. ore.
Pilotage, in	36 20
„ out	46 00
Port charges, including tonnage dues, harbour dues, lights, clearing in and out	246 19
Discharging ballast	18 00
	<hr/>
	346 39 = £19 4s. 10d.

VESTERVIK.

Vestervik is in lat. 57°46' N., long. 16°37' E.

Population.—9,200.

Imports.—Coal, iron, and machinery.

Exports.—Corn, iron, granite, matches, and deals.

Accommodation.—There is no bar, and the harbour is sheltered from all sides. Good anchorage will be found in 36 to 40 ft. The depth of water at the entrance to the outer port is 20 ft., and to the inner port 19½ ft. The railway quay is 800 ft. long, with a depth of from 10 to 16 ft. alongside; the depth available 30 ft. from the quay is 18 ft. Skeppsbron quay is 870 ft. long, with a depth of from 12 to 17 ft. alongside. There are two ballast quays with a length of 300 ft. and a depth of from 12 to 17 ft. alongside. Vessels bound for Gamleby, about 20 miles N.W. of Vestervik, have to pass Vestervik harbour and enter Gamleby Bay through the bridge of the Stageholms Canal, the passage being 50 ft. wide, and the depth of water 20 ft. at high water ordinary springs.

Pilotage.—Pilots meet vessels outside Ido pilot station.

Port Charges.—**Harbour Dues** :—7 ore per reg. ton in, and the same out. **Light and Beacon Dues** :—25 ore per reg. ton. **Tonnage Dues** :—10 ore per reg. ton. Provisions and good water at moderate prices.

WARBERG.

Warberg, in lat. 57°8' N., long. 12°17' E., is situated at the southern side of a small bay, and about a mile inside the Skrifvare Klippan (Warberg) lighthouse.

Population.—About 7,000.

Imports.—Coal, flour, rye, cotton, artificial manure, and feeding stuffs.

Exports.—Grain, granite, pit-props, sawn timber, etc.

Accommodation.—The depth of water in the outer roads, which afford good shelter in all weathers, is from 18 to 24 ft., on a good holding

Sweden—Warberg (continued).

bottom of sand and mud. The harbour has a depth of 15 to 16 ft. alongside the quays, and is perfectly safe in all weathers, and easy of access with all winds. A new stone quay has been built, about 1,000 ft. long, with railway tracks, and the quays have now a total length of over 3,000 ft., with enough water for vessels drawing 16 ft. There is a hand crane to lift 6 tons. On the outer pierhead is a lighthouse, with a bright flashing light visible about 5 miles, showing the entrance, and lighted as long as the harbour is free of ice. Vessels must keep within the arc of white flash. North of the entrance line the light shows red flash, and south it is dark. Small repairs can be executed.

This is a port particularly well adapted for coaling steamers either to or from the Baltic ports, as going in takes them but a short distance out of the direct route, and, if too deep draughted to enter the inner harbour, they can always get coal out to the roads in lighters. There is always a large supply of different kinds; first class large steam coal always obtainable at reasonable prices alongside bunkers. No restrictions as to fire and lights unless loaded with petroleum.

Pilotage.—Compulsory for vessels over 40 reg. tons, when coming from, or bound to, a foreign port. There is a good staff of pilots, keeping a constant look out, who will always come out on the usual signal being made.

Port Charges.—Harbour Dues:—Vessels from or to foreign ports, 12 ore per reg. ton each way; vessels from or to Swedish ports, 9 ore per reg. ton each way. Steamers calling only to obtain coal are exempt from harbour and all other dues, except pilotage. Vessels coming into the roads from stress of weather are free from harbour dues. Vessels entering the inner harbour for provisions pay half harbour dues. **Tonnage and Light Dues.**—See **Sweden.** **Towage:**—Can generally be obtained at very reasonable rates. A tug is stationed here. **Labourage:**—Discharging coal, 50 to 55 ore per ton; loading granite setts, 40 to 50 ore per ton; sawn timber and pit props, 1 kr. 50 ore to 2 kr. per standard. **Ballast:**—Free alongside, 50 to 60 ore per ton. **Water:**—If brought down by the ship's crew from a well in the vicinity, free; if carted, 1 kr. 50 ore per large cask, or if taken from the waterworks pipe on the quay, 1 ore per reg. ton for drinking water tanks, and 2 ore per reg. ton for boilers, and 1 kr. per vessel for the use of the hose. **Provisions:**—Can always be obtained, of good quality, and at reasonable prices. **Brokerage:**—Commission on chartering, 3 to 4 per cent. on the amount of freight. Clearing charges, including interpreting, according to the government scale.

Pro Forma Charges on a steamer of 783 reg. tons, inwards from England, with 1,297 tons of coal, and outwards to England empty:—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Pilotage	28 00	28 00
Harbour dues	93 96	93 96
Light dues (free after being paid eight times in or out in one year).	195 86	195 86
Tonnage dues	78 34	—
Shipping office (once each month)	—	23 49
Custom House, overtime and stamped paper	7 00	—
Boatman	6 00	3 00
Clearance	50 00	30 00
Discharging 1,297 tons of coal at 55 ore per ton	713 35	—
	1,172 51	374 31
	+ 1,546 82 = £85 18s. 8d.	

Sweden—Warberg (*continued*).

Pro Forma Charges on a sailing vessel of 235 reg. tons, inwards from England with 347 tons of coal, outwards to England with 121 $\frac{7}{10}$ standards pit-props :—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Pilotage	17 00	13 00
Harbour dues	28 20	28 20
Light dues (free after being paid four times in or out in 1 year)	58 93	58 93
Tonnage dues	23 57	—
Shipping office (once each month)	—	7 18
Custom House, overtime, and stamped paper	5 00	1 00
Boatman	3 00	3 00
Clearance	25 00	25 00
Loading, stevedore, assisting crew, 50 ore per standard	—	60 85
	160 70 +	197 16 = 357 86 = £19 17s. 8d.

WISBY.

Wisby, in lat. 57°37' N., long. 18°19' E., is situated on the west coast of the island of Gothland.

Population.—8,800.

Exports.—Grain, timber, and lime.

Accommodation.—There is a good roadstead about half a mile from the city, in 18 to 20 fathoms, clay bottom, but only protected from the east winds. The pier harbour can receive vessels of 15 ft. draught, the inner harbour vessels of 14 $\frac{1}{2}$ ft. draught. The public quays have a depth of 11 to 12 $\frac{1}{2}$ ft. alongside. A new quay 790 ft. long has been built, with a depth of 14 $\frac{1}{2}$ ft.

Pilotage.—200 to 300 tons, 13 kr. ; 301 to 400 tons, 16 kr. ; in winter, 2 kr. more. The pilots generally meet a vessel just outside Wisby. Pilots do not take vessels drawing more than 15 ft. into Wisby.

Port Charges.—Tonnage Dues :—10 ore per reg. ton in, and the same out. If coming in a second time with cargo, the same ; in ballast, free ; going out, whether with cargo or ballast, free. **Light Dues :—**25 ore per reg. ton in, and the same out ; steamers only pay eight, and sailing vessels four times any calendar year. **Tonnage Dues :—**To harbour, 3 ore per reg. ton when going out, payable not more than once a month. **Harbour Dues :—**In from, or out to, a foreign port, 10 ore per reg. ton each way ; out to a port in Sweden, out of Gothland, 7 ore per reg. ton ; out to another port in Gothland, 3 $\frac{1}{2}$ ore per reg. ton. **Ship's Measuring :—**When necessary, 20 ore per reg. ton. **Seamen's House Dues :—**3 ore per reg. ton. **Harbour Master's Dues :—**Under 75 tons, 1 kr. ; 75 to 150 tons, 2 kr. ; 151 to 300 tons, 3 kr. ; over 300 tons, 5 kr. Moving ship, 2 kr.

Pro Forma Charges on a steamer of 200 tons reg., cargo of coal in, and deals out :—

	Kr. ore.
Tonnage dues, in	20 00
„ „ out	20 00
Light dues, in	50 00
„ „ out	50 00
Pilotage in, 15 ft., and out, 15 ft.	26 70
Harbour dues, in	20 00
„ „ out, and water	20 00

Carried forward 206 70

Sweden—Wisby (*continued*).

	Kr.	ore.
Brought forward	206	70
Seamen's house	6	00
Harbour master	7	00
Brokerage, in and out	60	00
Stamp	1	00

280 70 = £15 11s. 11d

YSTAD.

Ystad, in lat. 55°25' N., long. 13°48' E., is one of the best ports on the south coast of Sweden.

Population.—10,519.

Imports.—Coal, salt, bran, maize, oilcake, manure, machinery, grain, coffee, and tobacco.

Exports.—Grain, flour, and fish.

Accommodation.—The harbour is quite safe, and the traffic has never been stopped by ice. The average depth of water is 20 ft., but it is intended shortly to deepen it to 22 ft. All round the harbour are quays, 4,500 ft. long, with rails alongside connected with the railways to all parts of the country. Vessels drawing 19 ft. can lie alongside afloat. The anchorage in the inner roadstead is in 5 fathoms, and in the outer roadstead 7 to 10 fathoms. There is no tide; but during long continued E. and N.E. winds the water rises 1 to 2 ft., and by long S.W. winds falls 1 to 2 ft. There is a slip for repairing vessels of 450 tons reg., with shipbuilding yard and mechanics' workshop attached. Excellent fresh water can be had, and ship's provisions at moderate prices.

Pilotage.—Up to 100 tons, 8 kr.; 101 to 200, 12 kr.; 201 to 300, 16 kr.; 301 to 400, 19 kr.; 401 to 500, 23 kr.; 501 to 600, 27 kr.; 701 to 800, 34 kr.; 801 to 900, 38 kr.; 901 to 1,000, 42 kr. Harbour pilot and shifting, 3 kr. to 10 kr.

Tugboats are always to be had at a fixed rate of 25 kr. for vessels up to 250 reg. tons; above that size 10 ore per reg. ton. The Neptune salvage steamers are stationed here.

Port Charges.—For steamers and sailing vessels:—(A) Coming with cargo from a foreign port, and going with cargo or in ballast to a foreign port; (B) coming with cargo from a foreign port, and clearing coastwise in ballast:—

	A.	B.
<i>Inward Charges—</i>		
Tonnage dues	10 ore per reg. ton	10 ore per reg. ton.
Light „	25 „ „	25 „ „
Harbour „	12 „ „	12 „ „
Plank „	2 „ „	2 „ „
<i>Outward Charges—</i>		
Tonnage dues	10 ore per reg. ton.	None.
Light „	25 „ „	None.
Harbour „	12 „ „	9 ore per reg. ton.
Sailors' Home	3 „ „	None.

Ballast:—Sand 1 kr. 10 ore per ton, free on board. Petty expenses, about 1 ore per ton reg. **Light Dues:**—For sailing vessels paid only four times or two voyages during the calendar year. **Shipbroker's Fees:**—100 to 130, tons, 15 kr.; 131 to 190 tons, 20 kr.; 191 to 250 tons, 25 kr. And for each 100 tons more, 5 kr.; separate for inward and outward clearance. **Chartering Commission:**—3 per cent. Commission for collecting freight

Sweden—Ystad (*continued*).

is included in the above fee. Discharging coal from steamers, $9\frac{1}{2}d.$ per ton.

The charges for hauling an empty sailing vessel up and down on the slips are, per ton reg. (steamers are charged per gross ton), according to the following table, showing increase in cost per every 10 tons :—

Tons.		10.	20.	30.	40.	50.	60.	70.	80.	90.
	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.	Kr.
Tons, 400	330	305	310	315	320	325	—	—	—	—
„ 300	250	255	260	265	270	275	280	285	290	295
„ 200	200	205	210	215	220	225	230	235	240	245
„ 100	100	110	120	130	140	150	160	170	180	190
—	—	—	—	40	50	60	70	80	85	90

Should they have cargo or ballast on board, the tonnage of cargo or ballast will be added to the tonnage of ships. Coal in bunkers of steamers will be counted as cargo.

Charges for sailing vessels or steamers remaining on the slip, per day :—

Up to 40 tons	Kr. ore.
From 41 to 100 tons	5 50
Above 100 tons	8 00
	per ton 0 08

Pro Forma Charges on a steamer of 1,000 reg. tons, coming from a foreign port and going to the Gulf of Bothnia :—

	Inwards. Kr. ore.	Outwards. Kr. ore.
Harbour dues	120 00	90 00
Stages	20 00	—
Tonnage	100 00	—
Light dues	250 00	—
Pilotage	42 00	Not compulsory.
Harbour pilotage	10 00	—
Forms	2 00	—
British Consulate	2 25	—
Freight collection, $\frac{1}{2}$ per cent., stamps to passport	1 00	—
Custom House for overtime	10 00	—
Cost of discharging	1,050 00	—
Clearing fees	50 00	25 00
	1,657 25	+ 115 00 = 1,772 25 = £98 9s. 2d.

N.B.—Tonnage dues to be paid every voyage with cargo in, but out only once per calendar year, if loaded or not ; in both cases if coming from or going to foreign ports. To or from inland ports no tonnage or light dues ; light dues are paid eight times, or four voyages a calendar year, and leave a steamer free from further light due charges that year.

If the above steamer leaves for a foreign instead of an inland port, an addition to the above charges takes place. Out, light dues, 250 kr. Tonnage, if first time in the year, 100 kr. ; harbour dues, 30 kr. : sailors' house dues, 30 kr. ; together, 410 kr.=£22 15s. 6d.

TURKEY.

The Ottoman Empire embraces territories in Europe, Asia, and Africa ; these immediate possessions (exclusive of the State of Bulgaria and Egypt, and the islands of Crete, Cyprus, and Samos, which are only nominally subject), have a total area estimated at 1,157,860 square miles, with a population of 24,813,700 ; the European vilayets having an area of 65,350 square miles, with a population of 6,130,200.

Commerce.—The trade of the Empire, which is mostly carried on by sea, is of an annual value of about 46 million pounds sterling ; imports, 28½ millions, exports, 17¾ millions. An ad valorem customs duty of 11 per cent. is imposed on all imports. Commercial privileges are granted under capitulations to a number of foreign nations, including Great Britain.

Mercantile Marine.—The commercial navy of Turkey consists of about 1,000 vessels, with a total tonnage of nearly two hundred and fifty thousand tons. The most recent details available are those referring to the year 1905, when there were 104 steamers of 62,210 tons ; and 879 sailing ships, of 178,262 tons.

Internal Communications.—In European Turkey there are 1,239 miles of railway, and in the Asiatic provinces 2,524 miles. The main lines start from Salonica and Constantinople. Served by the railway, Salonica now occupies a natural position like Marseilles and Brindisi for doing European trade through the Suez Canal. The roads are badly made and ill kept ; there are no canals or navigable rivers of importance. There is a State post and telegraph service, but foreign post-offices are maintained in most of the large coast towns by nations commercially interested.

Currency, Weights and Measures.—Turkey has a gold standard, the lira or gold medjidie being equal to 18s. The divisions of money are as follows :—

40 paras	=	1 piastre = 2.16d.
100 piastres, gold currency	=	1 lira = 18s.
107 piastres, silver	=	1 lira.
110 piastres, gold	=	£1.
117/120 piastres, silver	=	£1.
88 piastres, gold	=	20 franc gold piece.
95 piastres, silver	=	20 franc gold piece.
£T10	=	£9.

Notes are issued by the Imperial Ottoman Bank.

The metric system of weights and measures was declared obligatory in 1892, but the decree is not enforced. The weights and measures in general use are :—

WEIGHTS.

1 oke of 400 drams	=	2.834 lb. avoirdupois.
44 okes = 1 cantar or kintal	=	124.696 lb. „
353 okes	=	1000.402 lb. „
792 okes = 1 Turkish ton	=	2244.528 lb. „

LENGTH.

1 draa or pike of 24 kerats	=	27 inches silk and woollen goods.
1 endasse or little pike	=	26.688 inches cotton goods and carpets.

Turkey.

CAPACITY.

1 rottol of 12 okiejeho	=	1-603 litres	=	·352 British Imperial gallon.
22 rottols = 1 killow	=	35-266 litres	=	·969 „ „ bushels.
825 killows	=	100	=	„ „ quarters.

Liquids are sold by weight, except petroleum and foreign spirits, which are sold by the British Imperial gallon.

Light Dues.—Lighthouse dues are payable as follows :—Vessels up to 800 tons net reg., 20 paras per ton ; above 800 tons, 20 paras per ton for the first 800 tons, and 10 paras for every ton in excess. Vessels over 800 tons receive a rebate of 10 per cent. on the total amount due.

The following extracts from the Regulations are of interest to ship-masters :—

As the mode of taking the tonnage of ships varies in different countries, the Ottoman ton of 792 ocques (okes) has been adopted for the purpose of calculating these dues.

Accordingly, special tables have been drawn up and affixed where necessary, indicating the duties to be paid according to the Convention, on the footing of the ton of each foreign country reduced into the Turkish ton.

Captains of all ships entering the ports on the Ottoman coast must, before their departure, attend at the office of the lighthouse dues, to produce papers proving their nationality, to declare whence they came and what is their destination, and to pay the lighthouse dues according to the tariff.

Captains of ships going from one Ottoman port to another must, on their arrival, go to the office of lighthouse dues of the place to exhibit the receipt of the duties paid, of which they are in possession ; after which the lighthouse agent will detach the coupon from the document, and will keep it in his office. Ships entering ports situated on the line of lighthouses, or which leave and the captains of which do not hold receipts for the payment of the lighthouse dues, will be considered as having violated the law, and will have to pay triple dues, mention of which shall be made by the lighthouse agent on the receipt to be delivered to them.

In case a ship shall leave without paying the lighthouse dues, and without obeying the injunctions of the lighthouse agents, the latter shall ascertain the name and nationality of the ship, and shall communicate them as quickly as possible to the central office of their district. If the ship committing the offence be foreign, the lighthouse agents shall inform in writing the Consul of her nation residing in the place, and the ship shall pay, in addition to the dues owing for her voyage, five times as many ; and in case there be no Consul in the place, or if he shall not act on the demand of the agents, reference shall be made without delay to Constantinople, and the Lighthouse Board shall complain in writing to the Consulate of the country to which the ship belongs.

Captains of ships who enter or leave an Ottoman port are obliged, in order to regularise their passports or other papers, to present a receipt of the lighthouse dues to their Consul and the liman-reis residing in the place.

Captains of ships entering or leaving ports in which there is no lighthouse agent, must, on their arrival in a port in which there is an agent, appear before him to declare the number of voyages they have made, and pay the dues for each voyage. In case they do not make this declaration, and that the number of their voyages be known later by their expeditions, they shall pay triple dues for each voyage, and six times as many in case of a second offence.

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It had been previously settled that the tonnage of all steamers should be reduced 40 per cent., in consideration of the space occupied by the engines and coal bunkers. But if this reduction be made in their acts of nationality, a second reduction shall not be made. These acts of nationality shall consequently be verified for the purpose at least once. Steamers of which the departures do not take place on fixed days, and which do not make a continual mail service, may pay the lighthouse dues integrally. But an allowance of 5 per cent. on the amount of those dues shall be accorded to the steamers which, like those of the Messageries Imperiales and Lloyds', are bound, in winter as in summer, to leave on fixed days, and to perform the mail service.

It is well understood that the ships which enter the ports subjected to lighthouse dues, or which leave them, are bound to pay the other regular dues on leaving and entering. However, ships which, from circumstances not to be controlled, or to escape a tempest, are obliged to put into a port comprised in a line of lighthouses, shall be exempt from the said dues, provided they perform no commercial operation; but if they engage in the most insignificant commercial operation they shall be obliged to pay the regular dues in full.

Sanitary Dues.—Vessels from any country arriving in a Turkish port pay: (1) A pratique duty (*droit de reconnaissance*), calculated on their tonnage, in accordance with the following scale:—

	Paras per ton.
From 1 to 500 tons inclusive	20
„ 501 to 1,000 tons „	10
For every ton exceeding 1,000 tons	8

Vessels entering Turkish ports are liable to this duty only once in the course of each voyage, and without counting intermediate stoppages.

(2) Quarantine charges in case of foul bill of health (*en cas de contumace*). These charges are:—

	Piastres.
(A) Fees to health officers and porters, per man per day	25
(B) Lazaretto charges, per person per day	5
(C) Dues for disinfecting goods:	
Goods in packages, per 100 okes	3
Hides and skins, per 100 pieces	10
Rags, per bale	10
Large animals, per head	1
Sheep and smaller animals, per head	0½
(D) Charges for disinfecting ships, as follows:—	
Ships from 1 to 100 tons, per day	10
„ 101 „ 200 „ „	20
„ 201 „ 400 „ „	30
„ 401 to 1,000 and upwards	40

The following vessels are exempt from the payment of these charges, fees to health officers and porters excepted:—(1) Men of war; (2) Ships driven into port in distress, provided they do not engage in any commercial transactions in the port into which they are driven; (3) fishing vessels.

Bill of health and visa dues (*droits de patente et de visa*), as well as all other previously existing dues not enumerated in the above tariff, are abolished.

The sanitary tax is to be paid in all ports of the Empire in silver coin of the realm.

N.B.—It is expressly understood (1) that the tonnage, according to the tariff, is that known as “register tonnage” (*tonnage commercial*); (2) that an English ton is equal to 40 Turkish kilos.; (3) that from the tonnage of steamers, the “register tonnage” (*tonnage commercial*) of which is not offi-

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cially stated, a deduction of 40 per cent. must be made (from the gross tonnage) for engine-room, coal-bunkers, etc.

Customs Regulations.—The following extracts from Turkish Customs Regulations are of interest :—

Upon the arrival of any ship, whether a sailing vessel or a steamer, in a Turkish port, the agent of the company, the master of the vessel, or his substitute, is required, before unloading any cargo, to remit to the Customs authorities two copies of his manifests, signed and certified by him, and which must be counterparts of the original. The copies of the manifest which bear the marks, numbers, and quantity of packages, should comprise all the articles destined to be unloaded at the port of arrival.

The original manifest should be presented at the same time as the two copies, and the Customs authorities will have the right of comparing, immediately, the two copies with the original, which will remain in the possession of the presenter.

The discharge effected and the operations declared in form, one of the copies of the manifest, countersigned by the Customs authorities, will be remitted to the master, agent of the company, consignee, or other substitute ; the other will be preserved with the Customs records.

Should the packages discharged be fewer in number than is designated on the manifest for the port of destination owing to—

1. That the package has not been disembarked ; or
2. That it has been landed elsewhere than at its proper destination, in either of the above cases, the master, the agent of the company, or his substitute, will be required, within a given time, to prove such to be the case.
3. Should the package be lost, and claimed by the shipper or the person for whom it is destined, the master, agent of the company, or his substitute, will be required to prove, within a given period, that he has repaid the value of such packages.

The Customs authorities will be unable to make any claim if the proofs mentioned in paragraphs 1, 2, and 3 have not been produced.

4. In the event of the package being lost, and not claimed, the master, agent of the company, or his substitute, must pay the Customs duty according to the value stated in the manifest. If the value should not be known, he will be required to pay to the Customs authorities, as a fine, twice the amount of the freight paid or assigned.

The period allowed in order to produce the above-mentioned proofs, as well as those of damages, will be six months from all ports, without distinction.

If the required proofs cannot be furnished within 48 hours after the discharge, the agents of the Steam Packet Companies may give a written declaration, engaging themselves to produce the necessary proofs within six months. In the case of sailing vessels or steamers which have no permanent representative, the master must, before leaving the port, deposit with the Customs the amount of dues or of fines which he would have to pay if he failed within six months to produce the above proofs, or else to give a satisfactory guarantee to the Customs for the payment of the said dues or fines.

No merchandise will be allowed to be landed on the Custom-House quays without permission of the Customs authorities.

The permission will be accorded immediately upon the presentation of the two copies of the manifest.

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As it frequently happens that it is indispensable to sailing vessels having another destination, and to steamers which perform a regular service, to commence unloading their cargoes without delay, the Customs authorities will permit their discharge into lighters during the process required for the formalities of presenting the two copies of the manifest. Nevertheless, such merchandise cannot be landed until the master or the consignee has observed the regulations on this point, and has obtained the above-mentioned permission. The Customs authorities will appoint a place for the purpose of inspecting the luggage, etc., of travellers, and from which no one will be exempted. Such articles as bear evidence of service, as well as new linen, clothes, boots, and shoes and such like articles, and objects which the Customs regard as intended for the personal use of travellers, will be exempt from Customs duties.

Emigration.—Before any ship carrying emigrants can depart from an Ottoman port the authorities have to satisfy themselves that the following conditions have been complied with :—

That the ship has been put in a state of perfect cleanliness, and, if necessary, disinfected ; that it has been freed from rats (in future this operation will take place at Kavak on ships leaving Constantinople). That it is in a fit condition to undertake the journey without any danger. That there is sufficient space between decks to allow convenient room for all the passengers and the emigrants. That this between-deck space be supplied with openings on either side, the same being provided with funnels for ventilation purposes, opening and shutting hermetically ; there shall be a sufficient number of these openings to give sufficient light and ventilation. That communication with the between-deck be possible by means of two stationary staircases of at least one metre wide, and whose steps shall not exceed 20 cm. in height, for between-decks of 30 to 100 ft. length, and four staircases as described above for between-decks of larger dimensions than the aforementioned. That the deck and the between-deck be of wood, or of iron completely covered with planks of wood well joined together. That the ship be well manned, well divided, and well ventilated. That it be supplied, in addition to the stationary ventilation sails, or wind catchers, with supplementary sails long enough and in sufficient number to provide at least two to every opening, in order to allow a perfect ventilation of the between-decks. That it be provided with flexible pipes of sufficient length, and connected with the engine, so that it can be used in case of fire on board. That there be a sufficient number of boats and lifebelts, and that there be nothing on board that might be or become injurious to the health or the security of the passengers. That there be on board, in addition to the provisions of the crew, and properly stowed away, food and drinking water of good quality taken from a source free from all contamination, also fuel, all these in quantities sufficing for all the emigrants and passengers, and to last during the whole journey. The quantity of drinking water put at the disposal of each emigrant and passenger, no matter what age, shall be 5 litres daily ($8\frac{3}{4}$ pints).

The ship shall further be provided with :

A distilling apparatus, able to give 5 litres of water per day and per person, including the crew ; the tanks containing the drinking water shall be protected from all pollution, and shall be closed in such a manner that the water can only be distributed by means of taps or of pumps. A disinfect-

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ing hot-air oven, properly patented, with all the necessary implements to effect efficacious disinfection, and to the good condition and proper working of which the sanitary authorities of the emigrants' embarkation port shall certify. At least two rooms specially set apart as kitchens for the emigrants and passengers, who shall not be permitted to light any fires anywhere else than in the said rooms; neither shall they be allowed to use samovars in any other place except in the kitchens. A private place at each side of the deck, provided with a handpump supplying sea water for the necessities of the emigrants and passengers. One of these places shall be exclusively for the use of the women. Water closets for the use of the crew. Water closets, covered with sheet-iron or lead, securely fixed to the gunnel of the ship, one w.c. at least to every 50 persons on board; a sufficient number of same shall be set apart exclusively for the use of women. There shall be no w.c. on any of the between-decks nor in the hold.

The heavy luggage and the arms of the emigrants and passengers shall be registered, numbered, and placed in the ship's hold, all except the necessary food for the journey. The deck, cleared of all goods or any other objects, and covered with a double tent, shall be exclusively reserved, night and day, for the use of the crew, and for the between-deck emigrants and passengers, who shall be encouraged to make as much use of it as possible, free of charge.

All superstructure on the deck is prohibited.

It will be the duty of the surveying commission to ascertain the proper working of the distilling apparatus, the disinfecting oven, as also of the ventilators and the electric lights on board of emigration vessels.

Space :—The space which is to be allotted to each emigrant or passenger, independent of age or sex, shall be 1.50 sq. m. (16 ft.), the height of the between-deck to be at least 1.80 m. (6 ft.), for the between-decks above the water line. The between-decks of emigration vessels whose floor is below the water line cannot be considered as free space to be measured for the accommodation of passengers and emigrants, unless the same be thoroughly ventilated, the walls covered with boards, and that the distance between the water line and the floor of the between-deck does not exceed 2 ft. On the sleeping decks, which are to be provided with mechanical ventilators and electric light, a space of 86 cub. ft. shall be allotted to each emigrant, and emigrants may be lodged there, even though the floors of the said between-decks are below the water line. Between-decks, however, with improvised beds, and not provided with the necessary comforts, shall not benefit by the preceding rule. The cabins for the staff and the crew's quarters must be reserved exclusively for the use for which they were originally intended, and it is prohibited to put emigrants there.

With regard to the space to be allotted to emigrants and passengers on sambouks with coasting service, each emigrant and passenger on board shall be allowed a space of at least 2 sq. m. surface.

CHANAK KALESSI, OR DARDANELLES.

Chanak Kalessi, on the Admiralty charts in lat. 40°10' N., long. 26°23' E., is the principal town on the Straits of the Dardanelles, and is about 13 miles from the entrance.

Turkey—Chanak Kalessi, or Dardanelles (*continued*).

Population.—21,700.

Imports.—Colonial products, manufactured goods, and flour.

Exports.—Grain, pottery, valonea, and hides.

Accommodation.—It is a telegraph and post station for all parts. The Eastern Telegraph Co.'s cables are laid to the town. There are French, Austrian, and Russian post offices, which receive letters from all parts of the world, and these offices should always be used in preference to the Turkish. All mail steamers call.

Pilotage.—£2. There are English steam-tugs stationed here for towing vessels through the Straits to Constantinople, the Black Sea, etc. These tugs are useful and invaluable in cases of stranding, and for salvage purposes. There are divers and diving apparatus for performing temporary repairs to ship's bottoms, and a fitting shop for repairing machinery and boilers.

Danube pilots no longer meet vessels here, and now operate only on the Danube itself, under the control of the International Commissioners. Pilotage to the Sea of Azov, £8 to £12. **Diver's Survey** :—£8 to £10. **Towage** :—According to agreement.

Port Charges.—**Health Office Dues at Dardanelles** :—Payable there by ships performing a commercial operation, or which proceed to a port in the Sea of Marmora, stopping short of Constantinople.

TONNAGE DUES.

Vessels up to 500 tons register, per ton	20 paras.
„ from 501 to 1,000 tons register, per ton	12 „
„ „ 1,001 tons and upwards	8 „

Health office guards on board vessels placed under an observation of 24 or 48 hours, 4s. 2d. each per diem.

Fines and Penalties :—Imposed on vessels not having any bill of health or whose sanitary certificates are not in order :—

Sailing vessels up to 50 tons	£T2 = £1 16s. 0d.
„ from 51 to 200 tons	£T5 = £4 10s. 0d.
„ above 200 tons	£T10 = £9 0s. 0d.
Steamers of all sizes, invariable	£T12 = £10 16s. 0d.

Vessels arriving from abroad without a bill of health, delivered by the sanitary authority of the country sailed from, and vessels coming from a Turkish port without a Turkish bill of health, are liable to be fined.

Light Dues :—1 piastre per ton on tonnage up to 800 tons register, and 20 paras additional on every ton in excess of 800 tons, with a reduction of 10 per cent.

Neglect or evasion of payment subjects the vessel to a fine—in addition to the regular dues—of three times, and in particular cases of five times, the amount of the dues themselves.

Guardship Penalties :—Vessels passing the guardship at Nagara without communicating on the downward passage, or proceeding when ordered to stop, are fined 60 piastres gold for every blank shot loaded, and 90 piastres for every gun fired in order to arrest them.

British Consular Fees :—Ship's clearance is payable by vessels remaining 48 hours in port, or which have performed any commercial operation during that interval :—

Turkey—Chanak Kalessi, or Dardanelles (*continued*).

Clearance	£	s.	d.
Noting protest	0	2	6
Extending protest	0	7	6
Application for survey, and order of survey	1	0	0
Receiving report under 200 words, and copy survey	0	10	0
Surveyors' fees, each £1	1	0	0
Bill of health	2	0	0
	0	10	0

GENERAL INFORMATION.

Vessels from the Black Sea requiring a Consular bill of health, English or foreign, often cannot obtain one at Constantinople without much waste of time, and so prefer stopping at Dardanelles for one. Masters must bear in mind that the Consuls at the Dardanelles cannot deliver them such a document except on the production of their Constantinople (Turkish) bill of health, or one from their Black Sea loading port.

Pratique is given on board to all vessels proceeding up the Straits. A steam launch is employed by the sanitary office for the purpose. Vessels hoist a red and yellow striped flag as a signal that they require pratique. Pratique is given on shore to vessels requiring it on the downward passage, and they employ their own boats for the purpose. Ships leaving this firman at Nagara need not take pratique at the Dardanelles.

Contraband Trading :—The importation into the Ottoman Empire of arms, warlike stores, ammunition, gunpowder, dynamite, or other explosive materials, is forbidden, and vessels carrying them are liable to confiscation and fines, and the crews to imprisonment and other penalties. Such goods are, however, allowed transit through Turkish waters under certain conditions or regulations. The master, on arriving at the first Turkish port, must declare at once that he has such articles on board, no matter how insignificant the quantity be, and that they are destined for a port, which must be named, not in the Turkish dominions. The Turks are in the habit of questioning all captains when they take pratique as to whether they carry warlike stores of this description. There seems no harm in holding such an interrogatory, but the Vice-Consul, or his representative, should be present when the interrogatory is held.

White Ensign and Naval Reserve Flag :—Yachts passing the Dardanelles should fly the red ensign. Any yacht flying the white or blue ensign in the Straits runs the risk of being fired on by the forts.

PASSAGE OF THE DARDANELLES.

Shipmasters' attention is directed most particularly to the fact that the Dardanelles being considered the key to Constantinople, for military and sanitary reasons, very stringent regulations exist with respect to passing through, whether by day or by night—regulations it behoves shipmasters to know and observe strictly; otherwise they expose their vessels to very great risk and expense. These regulations are set forth here in detail for their proper understanding.

Upward Passage—Military Regulations :—Ships coming from the Mediterranean are not subject to any restrictions of detention by day; but though they are free to enter the channel by night, they are not allowed, on any pretext whatever, to enter upon that part of the Straits known as the Narrows from the hour of sunset to that of sunrise. The part called by the name of the Narrows begins below the Dardanelles town; and the forts of Chanak Kalessi, on the Asiatic side, and of Kilid Bahr, or Namazia, protect the en-

Turkey—*Chanak Kalessi, or Dardanelles* (continued).

trance. Vessels on no account must approach these forts during the prohibited hours nearer than one mile, and they must seek an anchorage below them, either in the Bight of Havouzler or in Sari Siglar Bay, the latter being the preferable anchorage. The closing of the Narrows by night is for military reasons only.

From the moment the beacons are lighted until they are extinguished masters must bear in mind that the passage is absolutely forbidden. Vessels at such hours attempting to approach and pass between the forts above named will be warned by the burning of powder on one or other of these places—a signal followed by the firing of three successive blank shots, if required. Inattention to these successive warnings will be succeeded by the firing with shot until the vessel turns back or is sunk. The order to sink vessels under such circumstances is peremptory. Whatever infringements of the rule were formerly permitted are no longer tolerated, and vessels which seek to disregard it incur a certain risk of damage, and even of destruction. Shipmasters cannot be too strongly enjoined to observe the regulations if they wish to avoid exposing ships and crews to imminent danger. Before the Turco-Greek war the French mail boats from Marseilles, the Italian from Brindisi, and the Austrian Lloyd from Trieste, formed an exception to the above rule, but since the war no vessels whatever are allowed to pass up the Straits at night.

Sanitary Regulations :—All steamships now take pratique at the Dardanelles health office. Pratique is also given to sailing vessels at the quarantine station in Erenkoi Bay.

Vessels with foul bills of health, or which have any sickness of an epidemic character on board, are not allowed to perform quarantine at the Dardanelles, but are obliged to go to Smyrna for that purpose. The lazaretto is at Clazomene. In cases where the orders of the health officer require an observation, vessels can remain at the Dardanelles for 24 or 48 hours, and sanitary guards are placed on board. A charge of 25 paras per guard for the 24 hours is made. These are the actual regulations, but they are not invariable, and are subject to frequent changes.

The papers which upward-bound vessels are required to produce at the health office are the certificate of registry, and all and every bill of health referring to the voyage since its commencement. The certificate of registry is required in order to ascertain the exact tonnage to fractional parts. The most essential document to be produced is the bill of health from the original port of sailing, or the first loading port. The non-production of it will create great difficulties, and generally subject the vessel to a fine. In addition, a health certificate must be forthcoming from any and every port touched at in the course of the voyage. In English ports, as Gibraltar and Malta, the authorities do not put an endorsement on the bills of health presented, but deliver fresh documents. Masters, however, in addition to such new bills, should take care to obtain back all original certificates, that they may be forthcoming here if they would avoid difficulties. The only bills of health recognized by the Turkish authorities are those delivered by the sanitary authority of the port or ports of departure. Consular bills of health, whether emanating from abroad or from Turkish ports, are not acknowledged. The fee paid for a Turkish Consul's bill of health is mere money thrown away.

Vessels arriving from abroad, or from a Turkish port, unprovided with the health certificate above mentioned are fined. The fine is paid at the

Turkey—Chanak Kalessi, or Dardanelles (*continued*).

Dardanelles. Sanitary tonnage dues, in cases in which the vessel performs a commercial operation, are paid at the Dardanelles, but if the vessel proceeds to Constantinople direct they are paid there or at the first Turkish port at which they stop. Vessels arriving at that port without having sought and obtained pratique at the Dardanelles are fined, and may in addition be put into quarantine. If with foul bills, or in time of epidemics, in addition to being fined, they will be sent back to Smyrna.

The master must himself be the bearer of all sanitary vouchers. The presentation of them through any other agency will not save the vessel from any penalties their absence entails. But when the bill of health which has been left behind by inadvertence at the port of departure is forwarded by the sanitary officer of that port to the health officer at the Dardanelles, or preferably to the Health Department at Constantinople, so that it precedes the ship's arrival at the last named port, the fine in most cases will be remitted. When the weather renders it impossible to communicate with the health officer, vessels with clean bills of health may proceed on to Constantinople without incurring a fine, but on no account must they do so if with foul bills of health.

Pratique is now given on board, and the health officers speak English. Masters ought to make a point of communicating under all circumstances with their agent, and of furnishing him with the information required, to enable the agent to wire to Constantinople, for the purpose of getting ready their clearances for the Black Sea, so that they may have no detention at Constantinople, but be able to pass through the Bosphorus without stopping. The particulars which the master must give to the agent here personally, or for more security in writing, are :—Names of vessel and master, port of registry, register tonnage, numbers of crew and passengers, cargo, where from and whither bound, and ship's official number.

Passage Downwards—Military Regulations :—At Constantinople two firmans are simultaneously delivered to ships—the one to enable them to pass out of the Bosphorus into the Black Sea, the other to enable them on their return to pass through the Dardanelles. These firmans are written in the Turkish language and character, and are therefore unintelligible to shipmasters. It behoves masters, then, when receiving these documents, to make themselves sure that they have the firmans intended for their own vessel, and which is the Black Sea and which the Dardanelles pass. Vessels proceeding into the Black Sea often leave the wrong firman at Kavak, where it appears no examination of it or observation is made ; and, in consequence, when they return to the Dardanelles, where the authorities really examine the papers, the vessels are stopped and detained until reference is made to Constantinople for a special order to free them, and this detention is generally of 24 hours' duration. The shipping agents at Constantinople sometimes mark the firmans as "Black Sea" and "Dardanelles" before handing them to the ship, but they so frequently mark them wrongly that no reliance is to be placed by the shipmaster on such marking.

Vessels arriving at the Dardanelles with the wrong firman, i.e., the Black Sea firman, or a firman belonging to another vessel, are detained as aforesaid.

The downward passage is free by night, as well as by day, by the performance of the following obligations :—

A guardship is stationed in the Bay of Nagara, about three miles to the

Turkey—Chanak Kalessi, or Dardanelles (*continued*).

northward of the Dardanelles town, and vessels must stop off and communicate with this guardship. The guardship is a small man-of-war schooner sailing vessel, anchored in 10 fathoms of water, and carrying by day the ordinary Turkish ensign. By night she shows a red light at the fore-mast-head, and white lights on the ends of a spar laid across the fore-mast.

Vessels are required to produce and leave their Dardanelles firman on board this vessel. They must also produce their receipt for lighthouse dues paid at Constantinople. This receipt will be returned at once, the coupon or foil only being detached therefrom and retained by the guardship. If the firman and lights receipt be found in order the vessel is free to proceed, but not otherwise.

Two launches are now stationed at Nagara, which meet downward-going vessels to take their firmans. An official from the guardship is carried on board the launch. Charge, 10s. during the day; £1 during the night.

Vessels attempting to pass the guardship without communicating, or to proceed when their papers are not found in order, will be fired on.

Except the firman and lights receipt no other papers need be exhibited at the guardship; and masters are warned particularly on no account to send their bill of health or any other papers whatever belonging to their vessel to the guardship, as they may be lost, and their coming into the hands of the guardship's people often enable the latter to detain the vessel under unlawful prettexts.

When the weather is so bad that it would be dangerous to communicate with the guardship, vessels may pass on without the risk of being fired on.

Sanitary Regulations.—Downwards :—Vessels wishing to communicate with the shore must not produce their bill of health at the guardship, which is not a health office, and cannot grant pratique, but at the Dardanelles health office. Vessels coming from Constantinople, which intend to communicate with the shore in the Dardanelles, or at any other Turkish port, must be provided with a Turkish bill of health. Ships on clearing homeward from Constantinople generally take a Turkish bill of health, and it is always advisable to do so, as the want of it, when a ship by unforeseen causes has to put into a port before getting clear of Turkish waters, makes her liable to a fine. So long as this Constantinople bill of health declares the vessel bound to any place outside of Turkey, the vessel can obtain pratique at any Turkish port free of charge. But if it declares her as going to a Turkish port, she becomes on arrival there liable to tonnage dues.

Upward-bound Vessels :—Mail steamers are not exempted from the pratique laws. They must take pratique at the Dardanelles, or pay the fine of £T12=£10 16s., on arriving at Constantinople.

Pilots are not to be left on board the firman ship at Nagara; but the rule is not strictly observed. In times of epidemic it is probable, however, that the pilot would not be allowed to disembark at Nagara. The only safe plan to avoid difficulties at the Dardanelles is to leave the pilot at Kavak station, Bosphorus.

Bills of Health :—Downward-bound ships cannot be too particular in clearing at Kavak, Bosphorus. Unless the vessel intends touching at a Turkish port for a commercial purpose, i.e., for taking or landing cargo or passengers, the Kavak endorsement must only bear the name of the final port of destination, or the one at which she may call for orders. If the port of call for orders be in Turkey, care must be taken that the name thereof

Turkey—Chanak Kalessi, or Dardanelles (continued).

be followed by the words "calling for orders." If that phrase be wanting, the vessel on arriving at such port has to pay tonnage dues. With that sailing clause in the endorsement the vessel can call at the Dardanelles, or any other Turkish port, to land a pilot at the pratique office, or for any other purpose not being a commercial operation, without payment of dues. Vessels often come out from England or other countries with a bill of health, stating they are bound to the Dardanelles, when they intended merely to call there for orders. In such cases they are liable to pay tonnage dues here as well as at the port at which they discharge. Whenever, then, an outward-bound vessel wishes to call merely for orders at a Turkish port, the name of the port on the bill of health should be followed by the words "calling for orders," in order to avoid payment of tonnage dues.

Telegraph to Constantinople, 5 piastres for 20 words or under, 10 paras for every additional word. By cable, 30 paras per word. To London by English cable, 71 cents per word; Malta, 69 cents; Gibraltar, 69 cents; Egypt, 1 franc. **Ballast**:—8*d.* per ton. **Coal**:—Steam coal. About 500 tons of best Welsh coal is kept in stock. **Provisions**:—Fresh provisions can be obtained, but no fresh water. The best watering places in the Straits are Cape Helles, White Cliffs, the Bight of Havouzler, and Nagara Bay. Anchors and chains can be obtained, but no other ship's stores.

CONSTANTINOPLE.

Constantinople is in lat. 41°4' N., long. 28°57' E.

Population.—1,106,000.

Imports.—Manufactures of all kinds, colonial produce, coal, iron, lead, copper, tin, earthenware, glass, timber, tallow, etc.

Exports.—Grain, wool, cotton, boxwood, dye woods, silk, opium, tobacco, fruits, skins, rags, bones, drugs, otto of roses, carpets, etc.

Accommodation.—**Galata**:—All vessels, except those discharging coal into the dépôts near Tophaneh at the outer end of Galata quay, lie alongside the quays. Vessels discharging coal anchor end on, and the coal is carried over the stern. The quayage is 2,487 ft. long, with a depth of 22½ ft. alongside at low water. The variation of the level is about 25 in.

Stamboul:—All steam vessels anchor end on, and are loaded and discharged by lighters. The quayage is 1,197 ft. long, with a depth of water the same as on the Galata side.

The harbour is safe and commodious, and deep enough to float any vessel. Shipmasters should warn their crew against carrying knives on shore, as the practice is illegal.

There are 4 Government dry docks:—

No. 1.	383 feet long,	72 feet wide at the entrance,	32 feet on the sill.
" 2.	283 "	57 "	26 "
" 3.	256 "	62 "	26 "
" 4.	258 "	62 "	26 "

Floating dock, 275 feet long, 48 feet wide at the entrance, 17 feet on the sill, 1,500 tons lifting power.

There are 3 patent slips with lifting powers of 670, 500, and 450 tons respectively. Docks No. 3 and 4 can be used together. There are 2 private dockyards and the Imperial dockyard, where repairs can be done. There are steam floating sheers to lift 80 tons. Iron sheers to lift 50 tons and 20 tons. Two cranes to lift 5 tons each.

Turkey—Constantinople (continued).

Pilotage.—Optional. If a pilot is taken, the usual charge for steamers, either up or down the Bosphorus, is 30s. If entering the harbour to discharge, £3 in and out, and 16s. for mooring boat. Extra fees are charged if the vessel is to go above the first or second bridges, or to any special discharging berth on the Bosphorus.

Pratique.—All vessels bound for Constantinople are obliged to take pratique at the Dardanelles, where a steam launch meets them for that purpose. The same practice now exists at Kavak at the Black Sea entrance to the Bosphorus. Vessels must hoist the red and yellow flag at the foremast. This rule is strictly enforced under heavy penalties, and pratique can only be obtained between sunrise and sunset. Vessels arriving without a bill of health, or with an irregular bill, are fined as follows :—

Vessels from	1 to	50 tons	£T2 in gold =	£1 16s. 0d.
"	51	200 "	£T5 "	= £4 10s. 0d.
"	201 tons and upwards		£T10 "	= £9 0s. 0d.
Steamers of any size			£T12 "	= £10 16s. 0d.

If placed in quarantine, each guardian receives 25 piastres per day.

On arriving at Constantinople, the bill of health viséd at the Dardanelles must be produced.

Quarantine.—Steamers from the Mediterranean for Turkey, or Bulgaria, with a foul bill of health, must perform quarantine either at Vourla, near Smyrna, at Beyrout, or at Tripoli, in Africa, at the captain's option, before he will be allowed to pass the Dardanelles. When the quarantine is only for 24 hours, it can be performed in the Dardanelles. Steamers from the Mediterranean for Russian, Black Sea, Roumanian, or Azov ports, with foul bills of health, are allowed to pass the Dardanelles and Bosphorus in quarantine without detention, as Russia imposes her own quarantine on such vessels. They should proceed direct to the Dardanelles and receive there two health officers who are landed into quarantine at Kavak, the Black Sea mouth of the Bosphorus, on passing there. Steamers in quarantine from the Black Sea, if bound to Turkey, perform quarantine at Kavak. If bound beyond Turkey, they take two health officers at Kavak, who are landed into quarantine at the Dardanelles on passing there.

Sailing ships with foul bills of health must perform quarantine without exception, and are not allowed to take health officers and tow past.

Port Charges.—Light Dues :—Vessels in ballast or loaded, arriving from and returning to the Archipelago, 2 piastres per reg. ton ; proceeding to the Black Sea from the Archipelago, or vice versa, without loading or discharging, 1½ piastres ; loading or discharging cargo in port, 1¾ piastres. Shipmasters neglecting to pay these light dues, or to produce the receipts for the same, if from a Turkish port, incur very heavy fines. These rates are charged upon vessels up to 800 tons ; above that tonnage one-half is levied. Vessels pay also a lightship due of 15 paras per reg. ton ; a reduction of 10 per cent. is now made on these light dues. **Towing :**—Steam-tugs can usually be obtained in the Dardanelles, but there is no fixed tariff. A vessel with 500 tons of cargo would pay, under favourable circumstances, £25. When a large number of vessels are waiting, the charge would be as high as £35 for towing through the Straits. **Commissions and Brokerage :**—On chartering for abroad, 3 to 6 per cent. ; coasting and Levant, 10 per cent. on general cargoes inwards ; 1 to 2 per cent. on freight landed.

Mooring :—The charge for mooring is 2d. per net reg. ton for a stay of 8

Turkey—Constantinople (continued).

days. On returning from the Black Sea or Marmora, steamers pay 1*d.* per reg. ton on mooring the second time. **Water**:—The Quay Co. supply water at 10*d.* per ton in the harbour.

Ballast:—10 piastres per ton, put on board in the port; 3 piastres extra, outside the port (see regulations). The lighters are marked with the number of tons they contain. Should a shipmaster wish to verify the quantity he may do so; but if it proves correct he must bear the expense, and vice versa. **Labour**:—18 to 25 piastres per day. **Harbour Master**:—10*s.* **Bill of Health**:—10*s.* **Stevedore**:—Loading or discharging, 10*d.* per ton. **Ship-broker**:—For entering and clearing, £1 10*s.* to £5. **Quay Dues**:—These are paid by the consignees as follows: A fee of 2*s.* 6*d.* per ton weight; there is an additional charge of 10 piastres per ton for handling the goods on the quays. Quay dues on coal, 3*d.* per ton. **Hospital Dues**:—British Seamen's Hospital, 1*d.* per 3 reg. tons.

Provisions are generally cheap, and of good quality; beef, 7 piastres, silver, per oke; mutton, 7½ piastres, silver, per oke; vegetables from ¾ to 4 piastres, silver, per oke. **Consular Charges**:—On a steamer of 900 tons net reg. :—

	£	s.	d.
Entering and harbour-master's fee	0	10	0
Two applications for firmans	0	10	0
Bill of health	0	10	0
Hospital dues, 1 <i>d.</i> per 3 tons	1	5	0
On account of Turkish Government—			

	Piastres.
Two firmans	50 ¹
Two anchorage	12
	<hr/>
	62 0 11 2
	<hr/>
	£3 6 2

¹ Steamers pay 25 piastres in silver for firman, and sailing vessels 70 piastres.

Vessels bound for the Black Sea can now secure two firmans, one to clear the Bosphorus and the other the Dardanelles. The Bosphorus firman is received at Kavak; the Dardanelles firman is received by a guardship stationed off Nagara Point. A steam launch is in attendance night and day, and the charge is 10*s.* during the day and 20*s.* in the night.

All masters and seamen belonging to a British ship are entitled to the benefits of the British Seamen's Hospital, free of charge. The hospital supplies medicines of the best quality for replenishing the medicine chests of British ships.

There is a British Sailors' Home, and steamers calling contribute 2*s.* each voyage, also 1*s.* to the British Chamber of Commerce of Turkey.

Port Regulations.—Art. 1.—The port of Constantinople includes that of Galata and the part of the Golden Horn beyond the bridges. The port of Galata comprises the space between the Karakeuy bridge and the outside line of the buoys extending from Sali-Bazaar to Seraglio Point.

Art. 2.—All vessels entering the port of Constantinople are subjected to the following tax :—

1. All vessels performing commercial operations pay 4 paras per Turkish ton=2,244 lbs., for a sojourn not exceeding 4 days, and 8 paras for a longer stay. The days when the Custom House is closed will not be counted in a vessel's stay in port.

2. Vessels exceeding 800 tons burthen pay 4 to 8 paras, according to

Turkey—Constantinople (*continued*).

the length of their stay, up to 800 tons. The excess of tonnage over 800 tons will be charged half the above rates.

3. Vessels carrying firewood and charcoal pay 4 paras per ton.

Art. 4.—All notices, orders, etc., from the Liman Odassy to any vessel will be made in writing, and served on the captain or mate, who will sign the counterfoil and note down the hour at which he receives the communication. The hour at which the tugboat of the Harbour Administration will be placed gratuitously at the service of any vessel which has to change its berth will be mentioned on the order to move. The captain is free to refuse the offer of the port tugboat, but in that case he must provide himself with another, for a fine will be inflicted if his vessel has not begun to move at the hour when the port tugboat was to have been at his disposal.

Art. 5.—Every steamer entering the port of Constantinople, the limits of which are indicated in Art. 1, for the purpose of loading or discharging, must be moored fore and aft between two buoys, or by the head only to a single buoy. Vessels arriving to wait for orders, or those which merely come for water, will not be permitted to enter within the limits of the port.

Art. 8.—The white-painted buoys off Sali-Bazaar are to be used by vessels remaining not longer than 24 hours to take in coal. These buoys are free of dues, and they may be used as hauling buoys. The 24 hours expired, a vessel must immediately quit the buoy under the penalty of from 1 to 5 liras. A ship belonging to a company having reserved buoys in the harbour, and arriving in the night too late to take up its ordinary station, may moor to one of these buoys if it is free, but the vessel must leave the buoy in the morning.

Art. 11.—It is strictly forbidden for any trading vessel containing munitions of war, powder, or other inflammable matter, to enter within the limits of the port. All vessels having a cargo of this nature must anchor in the middle of the Bosphorus, or in the place specially indicated by an officer of the Liman Odassy in a written order. In every case such vessels must hoist, during their stay, a red flag at the fore-masthead.

Art. 12.—The captain of a vessel having on board an entire or part cargo of petroleum, naphtha, benzine, or any other mineral oil, natural or artificial, must anchor between Chiboukli and Pacha-Bagché, for the purpose of unloading and storing the cargo.

Art. 13.—Petroleum must be conveyed to the town in sheet-iron lighters, that every precaution may be provided against fire; and more than 100 cases must not be carried at a time.

Art. 19.—All sailing vessels entering the port for the purpose of loading or discharging must be moored with their sterns to land after having cast anchor or taken up a buoy.

Entrance within the limits of the port of Constantinople will only be accorded to those vessels that shall commence operations within 4 days, under a penalty of from 1 to 5 liras.

Art. 20.—All sailing vessels, before hauling into the tier, must rig in their jib-booms, their flying jib-booms, and their main booms; they must also brace their yards up by starboard braces, and put out fenders.

Art. 26.—Sailing vessels with cargoes of grain, or about to load such cargoes, must be moored between the bridges at about three-quarters of a cable length from the wood stores on the Stamboul side.

Art. 28.—Vessels lying between the bridges for the purpose of loading or

Turkey—Constantinople (continued).

discharging, for repairs or for careening, can remain there for one month without paying other dues than those for the buoys. After this period a tax of 10 piastres per day will be levied, unless it is satisfactorily proved by a survey that the repairs require a prolongation of time. When repairs are completed, the vessel must leave at once, or pay the aforesaid tax.

Art. 29.—Vessels meeting, after their departure from the port, with an accident which obliges their return, will not be called upon for a second payment of buoy dues.

Art. 32.—The right of supplying ballast to vessels anchored in the port belongs to the Government. The Liman Odassy will furnish ballast at the rate of 10 piastres per ton. Vessels outside the limits of the port, that pay no buoy dues, will be supplied at the rate of 13 piastres per ton.

Art. 34.—Vessels arriving in ballast are not allowed to discharge the same direct into other ships. If wishing to get rid of their ballast, they must inform the authorities, who will send lighters immediately for its reception. The ballast thus required by the Government will be paid for at the rate of one-third of the regulation price. Offenders against this rule will be subjected to a fine of from 5 to 20 liras.

Art. 35.—Captains wanting ballast must either go personally or send their mates to the ballast department of the Liman Odassy, and make their demands in writing 24 hours in advance. If the ballast is not then furnished, an indemnity of 20 paras per registered ton will be paid to the captain for every day's delay. Captains must, however, be careful to explain where their vessels are lying, and must see before quitting the office that their demand has been properly registered.

The ballast office will be open every day—Sunday excepted—from 9 o'clock in the morning until 4 in the afternoon.

Art. 36.—Except in case of fire, no tugboat, local passenger, or trading-boat will be permitted to be under weigh between one hour after sunset and half-an-hour before sunrise, except with the special permission of the Liman Odassy.

Any infringement of this regulation will entail a fine of 20 liras, as well as the payment of all damage that may be caused to vessels, lighters, boats, caiques, or property generally.

It must be well understood that this regulation will be strictly enforced: neither the plea of the manœuvre having been commenced before the hour above mentioned, nor, indeed, any excuse whatever for infringing this rule will be admitted.

Pro Forma Charges on a steamer of 1,905 reg. tons, proceeding to Constantinople with coal, discharging and then proceeding to Black Sea in ballast:—

	Piastres. paras.	£	s.	d.
Pratique dues: up, 586 piastres; down, 581 piastres	1,167 00			
Consulate fees and firmans up and down		2	0	8
Hospital dues, £1 19s. 8d.; Sailors' Home fee, 2s.		2	1	8
Lightship dues, 507½; buoy dues, 26½	771 30			
Light dues: up, 2,130½; down, 1,825½	3,956 00			
Bills of health and receipt stamps, Russian b/h		1	0	0
Pilotage		7	16	0
Telegrams from Dardanelles, boat hire and attendance		0	10	0
Chamber of Commerce contribution		0	1	0
Boat hires and petties, manifest, stamps		0	7	6
Discharging 4,484 tons				
less 89.2 per cent. for not weighing				

4,395 tons at 11d. 201 8 9

Carried forward 5,894 30 £215 5 7

Turkey—Constantinople (*continued*).

	Piastres. paras.	£	s.	d.
Brought forward	5,894 30	215	5	7
Bridge passes and guardian		3	10	0
Watchman at 5s. per night (twelve nights)		3	0	0
Mooring berth		2	0	0
Hire of tug		5	0	0
Gratuities, harbour and Custom officials		1	12	2
	5,894 30 =	53	0	11
Agency fee		5	5	0
		£288	13	8

Pro Forma Charges on a vessel of 1,905 reg. tons, passing through Constantinople to Black Sea in ballast :—

	Piastres. paras.	£	s.	d.
Pratique dues : up, 586 ; down, 581	1,167			
Consulate fees and firmans, up and down		2	0	8
Hospital dues, £1 19s. 8d. ; Sailors' Home fee, 2s.		2	1	8
Lightship dues, 507½	507 10			
Light dues, 1,825½ up ; 1,825½ down	3,651 20			
Bills of health and receipt stamp, Russian		1	0	0
Pilotage (optional and by agreement), usually		3	0	0
Chamber of Commerce contribution		0	1	0
Telegrams from Dardanelles with clearance details, boat-hire and attendance		0	10	0
Landing firman dues, down, day time		0	10	0
	5,325 30 =	47	18	6
Agency fee		3	3	0
		£60	4	10

Pro Forma Charges on a British steamer of 1,185 tons reg., double clearance Mediterranean—Black Sea, and vice versa, discharging a cargo of 2,500 tons of coal between the two bridges at Constantinople :—

	Piastres. paras.	Piastres. paras.
Sanitary dues :		
500 tons at 20 paras per ton	250 00	
500 " " 12 " "	150 00	
185 " " 8 " "	37 00	
	437 00	
Double clearance		874 00
Lighthouse dues :		
800 tons at 60 paras per ton	1,200 00	
385 " " 30 " "	288 30	
800 " " 10 " "	200 00	
385 " " 5 " "	48 10	
Upward clearance	1,737 00	less 10% = 1,564 00
800 tons at 60 paras per ton	1,200 00	
385 " " 30 " "	288 30	
	1,488 30	less 10% = 1,339 30
Lightship dues (double clearance) :		
800 tons at 12 paras per ton	240 00	
385 " " 6 " "	58 00	
		298 00
Turkish dues :		
Black Sea firman	25 00	
Mediterranean firman	25 00	
Anchorage downwards	6 00	
		56 00
Consular fees (double clearance) :	£	s. d.
Application for Black Sea firman	0	10 0
Application for Mediterranean firman	0	10 0
Bill of health	0	10 0
Hospital dues at 1 farthing per ton	1	4 8
	£2 14 8	= 303 30
		4,435 20

Carried forward

Turkey—Constantinople (continued).

	Piastres. paras.	Piastres. paras.
Brought forward		4,435 20
Fees and charges for discharging cargo of coal between the two bridges :		
Buoy dues (stay of over four days) :		
800 tons at 8 paras per ton	160 00	
385 " " 4 " "	38 00	
Bridge formalities :		198 00
Including formalities at Customs Houses, prefecture of port, bridge pass		
Mooring berth :		
On private property, about		198 00
Watchman	£ s. d.	30 00
Pilotage, as per agreement, in and out, about	5 0 0	
Tugboat, as per agreement, in and out, about	4 0 0	
Discharging coal, as per agreement between shipper and local agent, say 10d. per ton	104 3 4	
	£113 3 4	= 12,561 20
		17,333 00 =
		£150 19s. 11d.

NOTE.—If foreign bill of health is required, the cost of same is in addition to the above.

Hire of shoots and gear is included in the tonnage rate for discharging.

The difference in lighthouse dues between upwards and downwards clearance is for commercial operations, 10 paras per ton up to 800 tons, and 5 paras for tonnage exceeding that.

DARDANELLES.

(See **Chanak Kalessi**, p. 665.)

DEDEAGH, OR DEDÉAGATCH.

Dedeagh, in lat. 40°50' N., long. 25°50' E., is about 10 miles N.W. by N. $\frac{1}{4}$ N. from Enos.

Population.—4,000.

Imports.—General merchandise, coffee, sugar, leather, cloth, skins, drugs, stationery, hardware, rice, soap, woollen and cotton stuffs, etc.

Exports.—Canary seed, wheat, rye, maize, barley, oats, cocoons, wool, hides, skins, cattle, bones, valonea, etc.

Accommodation.—The anchorage is in $4\frac{1}{2}$ fathoms, mud bottom, about a mile from the shore. It is exposed to all southerly winds, which send a heavy sea rolling on the beach, at times rendering landing impossible. These winds are also bad for sailing vessels, as they prevent them from getting out. Sailing ships in consequence generally anchor about 2 miles off, so as to have a wide berth for getting under sail in case of a southerly wind springing up. At such times steamers get under the lee of the Island of Samothrake, 20 to 22 miles distant. Loading is carried out by lighters, each carrying from 20 to 35 tons of grain, but the Turkish boatmen go into

Turkey—Dedeagh, or Dedéagatch (*continued*).

Enos on the least appearance of bad weather ; shipowners should therefore have stringent clauses in the bills of lading and charter-parties about lay-days before signing for this place.

Pilotage.—Unnecessary, but if the captain requires the assistance of a pilot he can obtain one at Enos at a charge of 5 lire. Vessels bound for Dedeagh should make the land about Cape Grenea, below Enos, taking care to have a good berth, as the river Maritza has thrown out banks further than shown on the chart ; an offing of 3 miles will do if the lead is well attended to ; the water shoals very gradually ; when Enos is made the direction should be N.W. by N., and the low land soon comes into sight, with a long shed on the beach, and the Railway Co.'s offices (to the right of the shed), about half a mile inland. Steer for the shed, using the lead, and anchor in $4\frac{1}{2}$ fathoms about a mile from shore.

Port Charges.—Health Office Dues :—20 paras per reg. ton for the first 500 reg. tons, 12 paras for each reg. ton above 500 and up to 1,000 reg. tons, and 8 paras for every reg. ton over 1,000 reg. tons.

Lighthouse Dues :—For vessels not exceeding 800 tons reg., 24 paras per ton for all foreign ports, and all Turkish ports on this side of the Dardanelles as far as Macri. For the Dardanelles and the Bosphorus the dues are 1 piastre per reg. ton. Excess of tonnage above 800 reg. tons only pays half dues. A vessel coming from a port where there is no lighthouse agent pays here the dues of that port. From Marognia to Salonica the dues are only 20 paras per reg. ton, therefore if a vessel loads part of her cargo at Keramoti, where there is no agent, and comes here to complete her cargo, she has to pay the Keramoti dues of 20 paras per reg. ton and the Dedéagatch dues of 24 paras per reg. ton, making in all 44 paras per reg. ton. Any vessel coming from Constantinople, having paid the entire amount of dues (2 piastres per reg. ton), is exempt from paying further dues at one port on this side of the Dardanelles (either Enos or Dedéagatch). This measure does not extend to any port where the dues are 20 paras per reg. ton. Any vessel arriving from Constantinople or the Dardanelles without having the requisite receipt to show that the light dues have been paid is charged 6 piastres per reg. ton. The lighthouse dues, as well as the health-office dues, are paid in medjidies at 20 piastres.

Consular Fees :—10s. **Ballast :**—10 to 12 piastres per ton. **Labour :**—15 to 17 piastres per day.

DURAZZO.

Durazzo is in lat. $41^{\circ}20'$ N., long. $19^{\circ}25'$ E.

Population.—About 5,000.

Exports.—Corn, oil, etc.

Accommodation.—The bay is one of the best anchorages on the Albanian coast. There is 4 fathoms of water within half a mile of the town, but the bottom is foul and uneven. The anchorage in the bay is in 5 to 6 fathoms, about a mile from the mole. It is open to the S.E.

Turkey.

ENOS.

Enos, in lat. $40^{\circ}41'$ N., long. $26^{\circ}6'$ E., is situated on an isthmus at the mouth of the gulf of the same name.

Vessels hardly ever call here since the railway was made to Dedéagatch, as the produce from the interior is now taken there.

GALLIPOLI.

Gallipoli, in lat. $40^{\circ}26'$ N., long. $26^{\circ}38'$ E., is situated on the European shore of the Sea of Marmora. It is a small port with accommodation for vessels of from 50 to 100 tons. The anchorage is very safe, in 12 fathoms with 5 ft. at the entrance. No pilotage is necessary. Coal can be obtained from small lighters. There is a salvage tug.

KALAMUTI.

Kalamuti is in lat. $40^{\circ}50'$ N., long. $24^{\circ}30'$ E.

Exports.—Indian corn, etc.

Accommodation.—This is a safe port. Vessels lie at anchor in about 24 ft. of water. There is a depth of about 7 to 8 fathoms in the middle, and 3 to 4 fathoms close to the shore. The anchorage is good, being on a mud bottom. The sea is always calm. Ten yards from the quay there is a depth of 20 ft. Vessels moor stern on, and stages are run out from the shore. Grain is passed on board in bags, and emptied into the hold. Provisions are plentiful and cheap.

The only charges on a vessel of 388 tons reg., ballast in and cargo out, drawing $16\frac{1}{2}$ ft. loaded, were 20s. port dues, and 42s. gratuity to the harbour-master. Beef and mutton, 4 piastres per oke.

KARAGHATCH.

Karaghatch, in lat. $36^{\circ}53'$ N., long. $28^{\circ}32'$ E., is separated from Mar-marice by a peninsula 3 miles wide.

Accommodation.—The western arm of the harbour affords good and secure anchorage in 5 to 20 fathoms, on good holding ground; on the N. side is Ourouk Cove, which is well sheltered, and where vessels may be careened and repaired.

KAVALLA.

Kavalla is in lat. $40^{\circ}56'$ N., long. $24^{\circ}26'$ E.

Population.—10,000.

Imports.—Cotton fabrics, iron, steel, sugar, petroleum, etc.

Exports.—Tobacco, cotton, grain, etc.

Accommodation.—This is an open anchorage, in 8 to 10 fathoms, about half a mile off shore. It is sheltered from all winds except those off shore.

Turkey.

PARGA.

Parga is in lat. $39^{\circ}18' N.$, $20^{\circ}22' E.$

Population.—About 3,000.

Imports.—Maize, flour, colonial produce, etc.

Exports.—Oil, cheese, wool, olives, snuff, and fruit, especially cedrats.

Accommodation.—The harbour, which is a natural one, has a depth of about 36 ft. at a distance of 7 to 8 fathoms from the shore, and about 34 ft. at low water. It is exposed to winds from the S. and W., and vessels are sometimes obliged to go to the port of Ai-Ghiannaki (Glyky), which is about 6 miles S.E. of Parga; the goods are then transported overland.

Pilotage.—Not compulsory. According to agreement; 8s. to 16s. per day.

Port Charges.—**Mooring** :—Free, except for Turkish vessels.

Sanitary Fees :—According to reg. tonnage; up to 500 tons, 1d. per ton (20 paras); from 501 to 1,000 tons, $\frac{3}{4}d.$ per ton (12 paras). It is most advantageous to pay these dues in the Turkish silver coinage. **Consular Fees** :—Indorsement, 2s. 6d. Bill of health, 10s. **Labour** :—1s. to 2s. per day.

Brokerage :—According to agreement.

PORT LAGOS.

Port Lagos, in lat. $40^{\circ}55' N.$, long. $25^{\circ}5' E.$, is about 88 miles S.W. of Adrianople.

This port is now of no interest to shippers, all the trade being done through Dedéagatch.

PREVESA.

Prevesa, in lat. $38^{\circ}57' N.$, long. $20^{\circ}44' E.$, is situated on the N.W. side of the strait forming the entrance to the Gulf of Arta.

Population.—8,000.

Imports.—Cotton and woollen goods, petroleum, flour, indian corn, sugar, coffee, rice, wood, iron, leather, and hides.

Exports.—Valonea, wood, butter, cheese, wool, hides, olives, olive oil, fustic, etc.

Accommodation.—There is 12 ft. of water on the bar, and $12\frac{1}{2}$ ft. during S. winds. The town is considered unhealthy at certain seasons of the year. Vessels generally anchor in 7 to 9 fathoms, and wait for a pilot before entering.

Port Charges.—**Consular Fees** :—10s. **Health Office** :—1d. per ton reg. **Pilotage** :—As per arrangement; on a vessel of 126 tons, drawing 12 ft., 17s. 4d. for both in and out.

RODOSTO.

Rodosto, or Tekir Dag, in lat. $40^{\circ}59' N.$, long. $27^{\circ}28' E.$, is situated on the N.W. shore of the Sea of Marmora.

Exports.—Wheat, barley, oats, beans, flax and canary seed, millet, onions, wool, silk, and glass.

Imports.—Colonial produce, coal, iron, hardware, and glass-ware.

Turkey—Rodosto (continued).

Accommodation.—Vessels anchor about 5 cable lengths from the town in 5 to 6 fathoms, bottom of sand and shells, and are quite sheltered from winds on the S.W. by W. round N. to E. by N.

SALONICA.

Salonica, in lat. $40^{\circ}39'$ N., long. $22^{\circ}58'$ E., is at the head of the Gulf of the same name.

Population.—150,000.

Imports.—Coal, iron, cotton and woollen goods, textiles, rice, flour, coffee, alcohol, cheese, fruit, grain, hardware, iron and other metal goods, leather, petroleum, salt, soap, sugar, skins, tobacco, and wool.

Exports.—Grain, wool, tobacco, opium, skins, rags, carpets, leather, and eggs.

Accommodation.—The port of Salonica is situated on the west side of the town, and has the shape of a square wet dock. It is formed by a main quay wall of 1,312 ft. and two perpendicular moles, the west mole 820 ft. long, and the east mole 656 ft. long by 295 ft. wide, the three faces of which can be made use of. Further out to sea is a breakwater 1,837 ft. long at a distance of 1,312 ft. from the main quay. The entrance channel east is 656 ft. wide, and the west entrance 492 ft. wide. The port is a safe one, with good anchorage. Vessels enter and leave generally by the east channel. All vessels go inside the wet dock, where the largest ones can be moored either broadside to the quay or by their stern. In the latter cases cargo is loaded and discharged by means of cranes, while vessels moored broadside can load and discharge direct on to the quay. Alongside the quay and moles are 9 sheds, with a total area of 86,114 square ft. Railways connect the quays and moles, and water pipes with hydrants are laid alongside. There is one travelling steam crane to lift 15 tons, 1 steam crane to lift 5 tons, and 2 steam cranes to lift 2 tons each. The quays are extended outside the port on the east side to a length of about 3,600 ft., but the depth of water alongside these quays is not sufficient to allow of steamers coming alongside.

Salonica is the terminus of 3 railway lines (1) to Belgrade; (2) to Monastir; (3) to Constantinople.

Pilotage.—If the master is provided with a chart of the bay, a pilot is not required.

Port Charges.—**Light and Sanitary Dues** :—See Turkey. **Ballast** :—2s. per ton, but captains generally make an agreement to bring the ship down to her required draught of water for a lump sum. No ballast is allowed to be thrown overboard. **Labour** :—3s. 6d. to 4s. 6d. per day; loading grain, 2 piastres for 100 bags, equal to 25 quarters; loading grain to steamers, 3d. to 4d. per ton, including stevedore and foreman. **Tally Clerks** :—3s. 6d. to 4s. 6d. per day. Boat hire, 4s. per day. **Water** :—2s. per ton supplied by the Waterworks Co. on board. **Provisions** :—Beef, $3\frac{1}{2}$ d. to 4d. per lb.; bread, 1d. to $1\frac{1}{4}$ d. per lb.; vegetables, 1d. to $1\frac{1}{2}$ d. per lb. **Consular Fees** :—Bill of health, 10s.; endorsement of agreement, 2s. 6d. **Brokerage** :—£3 to £5 according to agreement.

Pro Forma Charges on a steamer of 1,029 tons net reg., at Salonica, loading part cargo of grain, arrived from Dedéagatch :—

Turkey—Salonica (*continued*).

	£	s.	d.
Light dues	4	3	3
Consular fees and British bill of health	0	12	6
Mooring and unmooring	2	10	0
Loading 1,150 tons grain at 3d.	14	7	6
French visés	1	2	0
Boat-hire, 4 days at 4s.	0	16	0
Telegram to owners and petties	0	9	6
Agency commission	2	10	0
Doctor's visit and medicine	1	10	0
	£28	0	9

SCUTARI.

Scutari, in lat. 42°3' N., long. 19°28' E., is about 18 miles from the sea, and about 28 and 22 miles from the ports of Antivari and San Giovanni di Medua respectively. The town is situated about a mile from the rivers Boyana and Drin and Lake Scutari.

Population.—About 40,000.

Imports.—Cotton manufactures, hardware, colonial produce, metals, leather, soap, salt, etc.

Exports.—Maize, wool, hides, skins, furs, wax, dye-woods, etc.

Accommodation.—The lake is navigable the whole of its length (about 36 miles) for vessels drawing from 5 to 6 ft. Scutari communicates with the Adriatic by the river Boyana, which is navigable for small vessels as far as the village of Oboti, 6 miles from the town. The bar at the mouth of the river has generally 4½ to 5 ft. of water, and inside as far as Oboti 13 to 14 ft. Merchandise is conveyed to Scutari from Oboti by flat-bottomed lighters.

Antivari, in lat. 42°4' N., long. 19°8' E., is a large roadstead. The anchorage is in 9 to 12 fathoms about a quarter of a mile off shore, and is exposed to the S., S.W., W., and N.W. winds, and is also bad with the wind E.N.E.

San Nicolo is at the entrance of the river Boyana, with an open roadstead.

San Giovanni di Medua, in lat. 41°50' N., long. 19°37' E., has two ports—the inner and the outer—the first with anchorage in 18 to 20 ft. of water, and the latter with anchorage in 15 fathoms. Both anchorages are safe, although exposed to swells with the wind from S.W. and W., or from E.N.E.

No British owned vessels call at the ports of Montenegro and North Albania, as the steam communications are monopolised by the Austrian Lloyds.

XERO PATAMO.

Xero Patamo, or Zeropotamo, is on the W. coast of the Gulf of Kassandra. It is an open roadstead, with anchorage in 5 fathoms. Vessels bound here call at Salonica to obtain pratique. There are no dues or charges. The only provisions to be had are sheep and goats, and the sole export is chrome ore.

Part II.

AFRICA.

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NORTH AFRICA.

ALGERIA.

Algeria, a French possession in Northern Africa, has a total area of 343,500 square miles, with a population of 5,231,850. It is essentially an agricultural country, and the external trade, amounting to about 33 million pounds sterling per annum, is mainly with France. The chief exports are cereals, esparto grass, tobacco, iron ore, zinc, and cork; the principal imports consist of manufactured articles, coal, and coffee. Algiers is now the most important coaling station in the Mediterranean. The internal communications are everywhere good, the roads being magnificent, whilst rapid progress is being made with the railway system now open for traffic over a length of more than 2,000 miles. The post, telegraph, and telephone services are well organized and equipped. Two stations for wireless telegraphy are being established, one at Algiers and the other at Oran. The Algiers station will be situated at Fort de l'Eau, some 10 miles E. of the town on the bay. It will be open to all private telegrams, and will consequently be able to communicate with passing steamers. It will communicate direct with Port Vendres and the Eiffel Tower. The currency, weights and measures are the same as those of France. The Bank of Algeria, whose privilege has been extended to the end of 1920, is a bank of issue.

Pilotage.—Ships requiring the services of a pilot at any port in Algeria may obtain same by showing the following signals: During the day, a white flag with blue border P at the foremast head. At night, a white light above the gunwale, and screened several times at intervals of 15 seconds during 1 minute; this signal should be accompanied, if necessary, by blue lights burnt at intervals of at least 15 minutes. **Rates:**—Inwards: French sailing ships, or those assimilated thereto, 4 c. per reg. ton. Sailing ships, not assimilated, 6 c. per reg. ton. French steamers or those assimilated thereto, 2 c. per reg. ton; steamers not assimilated, 3 c. per reg. ton. Outwards: All vessels outwards pay half of their inward rate.

Quay Dues.—On all vessels from European and Mediterranean ports: 50 c. per reg. ton when the quantity of cargo discharged exceeds half the reg. tonnage; 25 c. when equal to or less than half, but exceeding one-fourth; $12\frac{1}{2}$ c. when equal to or less than one-fourth, but exceeding one-tenth; 5 c. when equal to or less than one-tenth of the net reg. tonnage. Ships arriving from ports outside those of Europe and the Mediterranean pay double the above charges. Quay dues are paid in every port of the colony, but the total dues to be paid during any one voyage are not to exceed 50 c. per reg. ton for vessels from European and Mediterranean ports, and 1 fr. for vessels from all other countries.

Sanitary Dues.—On all vessels from European and Mediterranean ports, 10 c.; from all other ports, 15 c. per reg. ton. Vessels putting into

Algeria.

port compulsorily or voluntarily are exempt from sanitary dues, provided they do not give rise to any sanitary operation, and that they only carry out in the port re-victualling and coaling.

Wharfage is only levied upon goods, passengers, and carriages landed. It is levied according to the quantity of goods landed, in proportion to the tonnage of the vessel.

Passport Tax.—1 fr. 25 c.

Brokerage.—Steamers entering and clearing, if they take or discharge cargo, 40 fr.; if no cargo is discharged or loaded, 20 fr. Sailing vessels per reg. ton loaded, entering, 25 c.; clearing, 12½ c. up to 300 tons reg.; on every ton above 300 tons, 10 c. per reg. ton; entering or leaving in ballast, or calling for orders, half rates.

Cranage.—Since April, 1907, the hiring price of the cranes have been set as follows :—

	£	s.	d.
Ordinary day's work, with minimum of four hours—			
Sheer leg	1	0	0
Portable and turning cranes of—			
10 tons	0	5	5
3 "	0	5	0½
1½ "	0	4	0

ALGIERS.

Algiers is in lat. 36°48' N., long. 3°2' E. Distance by sea from Liverpool, 1,528 miles.

Population.—138,250.

Imports.—Coal and general merchandise.

Exports.—Minerals, wine, cork, sheep, etc.

Accommodation.—The port is formed by moles, enclosing about 235 acres. The general depth in the harbour is from 7 to 9 fathoms on a sandy bottom. The east jetty has been extended about 500 ft. to the northward. Extensive quayage is still in course of construction in the Arrière Port of l'Agha, there being a passage connecting the port of Algiers with the former. A mole of about 1,500 ft. now exists in a direction S.E. from the Fort du Conde and is being extended, enclosing and sheltering a considerable water area, minimum depth from 28 to 30 ft., where vessels can lie sheltered and in safety, and discharge or load to and from lighters. A quay length of about 2,000 ft. is now completed, giving accommodation to seven or eight steamers of 250 to 300 ft. length to discharge and load direct to and from the quay; depth 22 to 30 ft. Iron ore is principally shipped from these berths. A range (*ressac*) or back wash is experienced in bad weather, when vessels would probably have to warp from the quay-side. This drawback is being modified as the sheltering mole progresses from the Fort du Conde, and will no doubt cease when these works are completed; but till the Arrière Port is enclosed vessels should be prepared to quit the loading berths if bad weather is experienced.

The island of Al-Djefna, which lies immediately opposite the entrance of Algiers Port at a distance of 300 ft. from the main quay, is being joined to the latter. The work will probably be completed in 12 months, and will give quay accommodation of about 3,000 ft., where ships can lie alongside in safety in from 20 to 30 ft.

Algeria—Algiers (continued).

The dry docks at Algiers belong to the French Government, and when vacant are at the service of vessels of all nations. Repairs of almost every description can be executed with facility.

No. 1	is	428 feet long over all,	86 $\frac{3}{4}$ feet wide at the entrance,	and	29 $\frac{1}{2}$ feet on the sill.
No. 2	„	248	„	„	21 $\frac{3}{4}$ „ „ „
Floating	„	121	„	23	16 „ „ „

The width given is at high water ordinary springs level, and the depth on the sill is at high water ordinary springs. The floating dock is for torpedo boats, and is not available for merchant vessels. There are three careening slips, 131, 98, and 40 ft. wide respectively, and a pontoon for heaving down vessels of 150 to 200 tons. Ships moor stern on to the quay, and cargo is discharged by means of square-decked lighters. **Rate of Discharge**:—Coal, 600 to 800 tons per day; grain in bulk, 250 to 500 tons per day; general merchandise, 200 tons per day. Lay-days commence to count from noon of the morning after the ship's arrival, provided the ship is in berth and reported the previous day. There are six cranes on the quay to lift up to 15 tons each, and three floating derricks to lift 20 to 30 tons each.

Vessels laden for Algiers should be provided with the French Consul's visa to their bill of health from the original port and that last touched at. This, however, is unnecessary in the case of vessels which call only for coal.

There is daily steam communication with the whole of S. Europe via Marseilles; twice weekly for cargo. Railway communications to Tunis on the east, and to Oran on the west.

Bills of health should be presented at the Sanitary Office immediately on arrival. Pratique is granted night or day to all vessels coming from non-infected ports.

Time Signals.—Chronometers can be checked against the clock in the Town Hall, which keeps accurate mean time of Paris, 9 m. 21 s. fast of Greenwich mean time.

Pilotage.—Pilotage service is effected by large steam launches, painted black with a white band, towing a boarding boat, which is also utilized in passing stern moorings on arrival. Pilot boats fly flag P of the International Code. Steamers, 3 c. per reg. ton in and out; sailing vessels, 6 c. per reg. ton in and out.

Port Charges.—Sanitary Dues:—See **Algeria**. **Mooring**:—10 fr. **Passport and Brokerage**:—Steamers coming from European ports and discharging or taking cargo, 41 fr. 50 c. per vessel; if no cargo is loaded or discharged, 31 fr. 50 c. Brokerage for sailing vessels from European ports, up to 300 tons, 37 $\frac{1}{2}$ c. per reg. ton and 10 c. per ton for every ton over 300. Freight, 4 per cent. Collecting freight, $\frac{1}{2}$ per cent. **Quay Dues**:—Steamers and sailing vessels coming from European ports and discharging or taking cargo, 50 c. per net reg. ton, when the quantity of cargo discharged exceeds half the reg. tonnage; 25 c. when half or less than half but exceeding one-tenth reg. tonnage; 5 c. when equal to or less than one-tenth. If coming from other ports, an additional duty of 50 c. per ton is levied on all cargo landed, or on the reg. tonnage. Steamers calling for bunkers only, pay pilotage 2 c. per reg. ton, and no quay or local dues. If no cargo is loaded or discharged ships pay no port dues, and vessels arriving in distress, for supplies of provisions or coal, are also exempt from port dues. Port dues when paid in one Algerian port are not imposed at the others, supposing the ports touched

Algeria—Algiers (*continued*).

at are in continuance of the original voyage for which the ship has been cleared at the port where dues are paid.

Provisions :—Beef, mutton, veal, 6*d.* per lb. ; pork, 11*d.* per lb. ; fowls, 1*s.* 8*d.* each ; ducks, 2*s.* 8*d.* each ; eggs, 7*s.* per hundred ; potatoes, 5*s.* 6*d.* per cwt. ; live sheep, £1. **Water** :—Up to 5 tons with a minimum of 3 tons, 3 fr. per ton ; over 5 tons and up to 15 tons, 2 fr. 50 c. per ton ; over 15 tons, 2 fr. per ton. If water is supplied at night there is an extra charge of 1 fr. per ton. **Ballast** :—3 fr. 10 c. per ton.

Stevedoring :—As per agreement, usually 1*s.* per ton.

Dock Charges :—Large dock, say, £48 for a week's occupation ; small dock, say, £32 for a week's occupation. Shoring, blocking, etc., exclusive of the above, generally estimated thus : Occupation of the dock for a week is, say, £60 to £70 and £80 to £90 respectively, irrespective of time up to a fortnight.

Pro Forma Charges on a steamer of 1,000 net reg. tons discharging a full cargo of coal :—

	Fr.
Quay dues, 50 c. per ton	500
Sanitary dues, 10 c. per ton on net reg. tonnage	100
Peage or local tax, 10 c. per ton cargo (ton of 1,000 kilos).	100
Pilotage, in and out, 3 c. per ton	30
Mooring	10
Agency as arranged, from 100 to 125 fr.	100

840 = £33 6*s.* 7*d.*

ARZEW.

Arzew, or Arzeu, in lat. 35°53' N., long. 0°19' W., is 244 miles E.S.E. of Gibraltar.

Population.—2,500.

Exports.—Salt, corn, esparto grass, cattle, and wine.

Accommodation.—The port is frequently visited by European shipping as a place of refuge in winter and autumn. The anchorage is good, being only exposed to E. and N.E. winds. There is a breakwater, which affords good shelter to merchant vessels. Arzew is almost land-locked. A new mole is now under construction, and the old one is also being extended. Vessels lie alongside the quays, where there are cranes to lift up to 3 tons ; there is also a floating derrick to lift 7 tons. Provisions are plentiful and moderate in price. Water is of bad quality and dear. A bill of health should be obtained before leaving.

Pilotage.—Steamers, 7 c. per reg. ton ; sailing vessels, 14 c. per reg. ton.

Port Charges.—**Town Dues** :—4*d.* per 1,000 kilos. of cargo loaded and discharged. All other expenses are the same as at Oran.

BENI-SAF.

Beni-Saf is in lat. 35°20' N., long. 1°20' W.

Population.—6,000.

Imports.—Lime, wood, and iron.

Exports.—Iron ore, vegetable fibre, fruit trees, vines, olives, etc.

Accommodation.—The harbour is the property of a company who

Algeria—Beni-Saf (continued).

own and work the iron mines, and they have constructed a commodious port, 45 acres in extent, by means of two artificial moles or breakwaters, which protect vessels from the W. and E. winds. The entrance faces E., and has a width of 150 metres (491½ ft.), and is completely sheltered from the E. winds by the coast. There is a depth of 30 ft. at high water and 28 ft. at low water. Vessels can load by a chute to 22 ft. at the breakwater. The iron ore is worked in open quarries close to the sea, and tilted into the vessel's hold, at the rate of from 1,600 to 2,500 tons per day. There is a good workshop, available for general repairs. There is a crane to lift 6 tons, and floating sheer legs to lift 40 tons.

Pilotage.—Compulsory. **Steamers** :—£1 entrance and clearance.

Port Charges.—**Boat Hire** :—£1 12s. **Consular Fees** :—10s.

Ballast :—6d. per ton. **Brokerage** :—£1 12s. **Water** :—2s. 6d. per ton.

Sanitary Dues :—10 c. per reg. ton.

Pro Forma Charges on a steamer of 3,000 tons reg., ballast in, with a cargo of iron ore outwards, drawing 24 ft., loaded :—

	£	s.	d.
Sanitary dues	12	0	0
Brokerage	1	12	0
Pilotage, in and out	1	0	0
Boat hire	1	12	0
Water, 20 tons	2	10	0
	<hr/>		
	£18	7	6

BONA.

Bona is in lat. 36°52' N., long. 7°46' E.

Population.—42,000.

Imports.—Coal, wood, etc.

Exports.—Iron, lead and zinc ores, phosphate rock, wines, grains, hay, straw, esparto, cork-wood, and cork-tree bark.

Accommodation.—The port is built on the shore of a small bay affording good shelter in a moderate depth of water. The port is sheltered from N. to W. naturally, and is protected by the Jetée du Lion (east) and the Jetée du Sud (south). The length of Jetée du Lion is 2,953 ft., and it encloses the new outer harbour. The length of Jetée du Sud is 4,800 ft., and it encloses the inner port.

New Outer Harbour :—Area, 110 acres ; depth, 26 to 46 ft. ; length of quay (for petroleum cargoes), 400 ft.

New Inner Port (*Grande darse*) :—Area, 125 acres ; depth, 24 ft. ; length of quayage, 4,800 ft. ; depth alongside the quays, 21 ft. ; vessels discharge alongside the quays. Enormous quantities of iron ore are expected to be exported annually.

Old Inner Port (*Petite darse*) :—Area, 29 acres ; depth, 24 ft. ; length of quays, 1,860 ft. ; depth alongside N. and W. quays, 22½ ft. There are excellent facilities for loading and discharging. Rails laid alongside the quays and steam cranes floating and movable.

Dispatch :—Discharging : Wood, 300 tons per day ; coal, 300 to 400 tons, and up to 600 tons per day according to facilities given. Loading : phosphates, 500 to 700 tons ; ores, at the wharf of the Mokta Mine Co., 1,000 tons per day.

Algeria—Bona (continued).

Pilotage.—In and out together, steamers, 4 c., sailing vessels, 8 c. per reg. ton. Changing moorings, 6 fr. each move.

Port Charges.—Quay Dues:—50 c. per reg. ton on all vessels from European and Mediterranean ports when the quantity of cargo discharged exceeds half the reg. tonnage; 25 c. when equal to or less than half but exceeds one-fourth; $12\frac{1}{2}$ c. when equal to or less than one-fourth but exceeds one-tenth; 5 c. when equal to or less than one-tenth the reg. tonnage. Vessels from all other ports pay double these charges. **Port Dues:**—50 c. per reg. ton. Vessels making a stay pay 50 c. per ton of merchandise loaded ^{and} or discharged, with a maximum of the vessel's reg. tonnage.

Discharging:—Coal, 1 fr. 25 c.; wood, 1 fr. to 1 fr. 25 c. per ton. **Loading:**—Phosphates and ores, 1 fr. per ton. **Mooring and Unmooring:**—Steamers, 15 fr. **Ballast:**—Per ton under ship's tackle, 1 fr. 50 c.

Water:—Delivered at the quay by hose, 1 fr. 50 c. per ton, with a minimum of 5 tons; delivered in the roads from a tank boat, 2 fr. per ton, and extra charge for towing the boat.

Provisions:—Per kilo., bread, 30 to 35 c.; sea biscuits, 50 to 65 c.; beef, 1 fr. 50 c.; rice, 45 c.; sugar, 90 c.; coffee, 4 fr.; potatoes, 20 c.; fresh vegetables very cheap. **Coal:**—A large stock of coal of all qualities is kept in stock, and can be delivered at the rate of 40 tons per hour. Steamers calling only for coal pay simply pilotage dues and half brokerage dues.

Pro Forma Charges on a steamer of 600 reg. tons from England, with 1,000 tons of coal, leaving with 1,000 tons of phosphate:—

	Fr.	c.
Quay dues, 50 c. per reg. ton	300	00
Passport	1	25
Sanitary dues, 10 c. per reg. ton	60	00
*Brokerage	40	00
Pilotage, 4 c. per reg. ton	24	00
„ mooring and unmooring	6	00
Port dues, 50 c. per reg. ton	300	00
Double mooring, 15 and 6 fr.	21	00

752 25 = £29 16s. 11d.

Pro Forma Charges on a sailing vessel of 500 reg. tons from Canada, with 240 tons of wood, after calling at another port, and leaving in ballast:—

	Fr.	c.
†Quay dues	250	00
Passport	1	25
Sanitary dues, 15 c. per reg. ton	75	00
Brokerage:—Entrance, 300 tons at 25 c. = 75 fr.; 200 tons at 10 c. = 20 fr.; leaving in ballast, 500 tons at 10 c. = 50 fr.	145	00
Pilotage, 8 c. per reg. ton	40	00
‡Port dues, 50 c. per ton manipulated	120	00

631 25 = £25 0s. 11d.

* The legal charge for brokerage is only 40 fr., but the brokers always charge more, from £3 to £5 according to the amount of work entailed.

† Case of tonnage discharged being over a quarter and under a half of register tonnage.

‡ Case of calling at another port and with tonnage manipulated less than register tonnage.

Pro Forma Charges on a steamer of 600 reg. tons, coming from a foreign port, loaded with 1,000 tons of wood, and leaving with 1,000 tons minerals:—

Algeria—Bona (continued).

	Fr.	c.
Customs, going in and coming out	200	00
Quay dues, at 50 c. per reg. ton	300	00
Sanitary dues, at 10 c.	60	00
Customs passport	1	30
Pilotage, 4 c. per ton, going in and coming out	24	00
Disembarking wood, 1 fr. per ton	1,000	00
Loading 1,000 tons minerals	1,041	67
Fresh water, 6 tons, at 1 fr. 50 c.	9	00
Double mooring, 15 and 6 fr.	21	00
Port dues, 50 c. per ton	300	00

2,956 97 = £117 6s. 5d.

BOUGIE.

Bougie, or Bouja, in lat. $36^{\circ}44'$ N., long. $5^{\circ}4'$ E., is about 122 miles E. of Algiers.

Population.—17,540.

Imports.—Flour, salt, etc.

Exports.—Oil, wax, figs, wines, etc.

Accommodation.—The port is well sheltered by the breakwater or jetty commencing at the point known as Fort Abd-el-Kadar. It is 1,180 ft. long, and is equipped with every facility for discharging all kinds of merchandise. Inside the breakwater there is a depth of about 22 ft. 9 in. There is good anchorage for vessels of any size. Floating sheer legs and cranes to lift up to 30 or 40 tons. There is a breakwater about S.E., 480 ft. in length, which affords shelter from E. winds.

Harbour dues, same as Algiers, plus 50 c. per ton net reg.

CHERCHELL.

Cherchell, or Shershel, is in lat. $36^{\circ}36'$ N., long. $2^{\circ}13'$ E.

Population.—About 3,100.

Export.—Wheat.

Accommodation.—Cherchell is a small port, and the anchorage is exposed to N. winds, but protected from N.W. to N.E. The best anchorage is N.W. by W., at Zizirin Point, in 8 fathoms. The inner basin is practicable to vessels of 200 tons, drawing about 11 ft., and is perfectly safe, but difficult of entrance in bad weather.

COLLO.

Collo, in lat. $37^{\circ}0'$ N., long. $6^{\circ}34'$ E., is about a mile eastward from Cape Bougaron.

Accommodation.—The port offers good shelter during westerly winds, in an anchorage of 9 to 12 fathoms one-third of a mile from the shore. Smaller vessels anchor in the bay half a cable from the beach. There is also, behind Cape de Ferro, a small cove well sheltered to the east, and anchorage in 18 to 20 fathoms. During the day a pilot-boat with a tricolour flag indicates the anchorage; at night with a green light. There are no pilot dues.

Ballast:—1 fr. 50 c. per ton.

Algeria.

DELLYS.

Dellys, in lat. $36^{\circ}51'$ N., long. $3^{\circ}57'$ E., is about 42 miles E. of Algiers.

Population.—10,000.

Imports.—Wheat, rice, salt, etc.

Exports.—Fruit, wax, honey, raisins, oils, skins, horns, figs, and briar pipes.

Accommodation.—The anchorage is in 16 to 18 metres ($52\frac{1}{2}$ to 59 ft.), good holding ground, and protected by a spit of land against winds from N.W. to W., but exposed to those from N. to E. There is a break-water here, and a landing pier, 400 ft. long, with a depth of 5 metres 40 cm. (17 ft. 8 in.) at the end. There is a crane to lift 2 tons.

For charges, see **Algiers**.

GOURAYA.

Gouraya, or Garaia, in lat. $36^{\circ}31'$ N., long. $1^{\circ}52'$ E., is some few miles W. of ChercHELL.

Accommodation.—Shipowners should avoid chartering for this place, as there is no shelter.

Port Charges.—Vessels have to enter at ChercHELL, where labour and lighters are supplied.

JIJELLI.

Jijelli is in lat. $36^{\circ}46'$ N., long. $5^{\circ}45'$ E.

Population.—7,000.

Imports.—Manufactured goods, sugar, coffee, dried vegetables, spices, soap, etc.

Exports.—Cork, tanrin, charcoal, and oak sleepers.

Accommodation.—The construction of this port was undertaken two years ago. A jetty 1,800 metres (5,900 ft.) in length runs from the peninsula to the lighthouse, so that vessels of large tonnage can take refuge in the harbour, which will be completely sheltered against N.W., N.N.W., N., and N.E. winds. There is good anchorage on a bottom of sand and weed.

Pilotage.—There is no pilotage service. Sailors are generally paid 25 fr. for pointing out the anchorage.

Port Charges.—**Harbour Dues** :—1 fr. per reg. ton. **Tonnage Dues** :—10 c. per ton of goods shipped. **Passport** :—1 fr. 25 c. **Brokerage** :—Customs clearance, 40 fr.; agency, 100 fr.

Pro Forma Charges on a steamer of 2,700 tons net reg. discharging 1,000 tons of building materials at Jijelli and loading 800 tons of cork :—

	Fr.	c.
Sanitary dues at 10 c. per reg. ton	270	00
*Quay dues at 25 c. per reg. ton	675	00
†Toll dues at 80 c. per reg. ton	2,160	00
Statistic dues, 1,000 tons at 10 c. (on goods landed)	100	00
Statistic dues, 800 tons at 10 c. (on goods loaded)	80	00
Passport dues	1	25
‡Lighterage, 1,000 and 800 tons at 3 fr. per ton	5,400	00

8,686 25 = £344 12s. 11d.

* The quay due is 25 c. per ton net reg., because the amount of cargo unloaded is between three-quarters and half of the net tonnage of the vessel.

† The toll due is 80 c. per net reg. ton, because the amount of cargo shipped and unloaded (1,800 tons) comprises three-fifths to four-fifths of the tonnage of the vessel.

‡ As there are two lighters at Jijelli, the price of 3 fr. per ton for lighterage might be a little reduced.

Algeria.

LA CALLE.

La Calle, or Cala, is in lat. $36^{\circ}50'$ N., long. $8^{\circ}28'$ E.

Population.—About 5,000.

Imports.—Coal, wine, and manufactured products.

Exports.—Ores, cork, hides, wool, etc.

Accommodation.—There is a breakwater here which forms a harbour of refuge to vessels visiting this port. The port is not very safe, being open to winds from the E. round N. to W. The anchorage is in 2 to 3 fathoms on sand. The port is only suitable for small vessels, as those drawing more than 12 ft. cannot enter the creek. The quay is 240 ft. long.

Pilotage.—25 fr.

Port Charges.—**Sanitary Dues:**—10 c. per reg. ton. **Passport:**—1 fr. 25 c. **Agency:**—200 fr. **Loading:**—Ore, 10*d.* per ton.

MOSTAGANEM.

Mostaganem is in lat. $35^{\circ}56'$ N., long. $0^{\circ}10'$ E.

Population.—22,000.

Accommodation.—The port is situated at the mouth of the little stream "L'Ain Sefra," between two points, Salamander and Karouba. It is protected by two breakwaters, 900 and 350 metres (2,950 and 1,150 ft.) in length respectively, and offers a safe shelter to vessels of large tonnage. Steamers drawing 18 to 20 ft. can come alongside the jetties. The port was partly dredged in 1907. Work will be shortly recommenced, and quays will also be constructed. There is a crane to lift 3 tons.

NEMOURS.

Nemours, in lat. $35^{\circ}6'$ N., long. $1^{\circ}52'$ W., near Cape Honé, is the most westerly port of Algeria.

Population.—About 2,000.

Exports.—Wheat, barley, wool, lead, oranges, etc.

Accommodation.—The anchorage is bad, being exposed to winds from N.N.W. On the first sign of bad weather vessels take refuge in the Zaffarin Isles, about 27 miles west of Nemours. There are 2 stone piers. The depth alongside the quay is 12 ft. Steamers of large tonnage anchor about 1,300 yards from the shore on a sandy bottom in 8 to 10 fathoms. There is a crane to lift 8 tons.

The steamer from Oran to Gibraltar calls here weekly.

Port Charges.—**Port Dues:**—Vessels from European ports, 50 c. per reg. ton; from other ports, 1 fr. per reg ton. **Brokerage:**—Sailing vessels entering, 25 c. per ton; leaving, $12\frac{1}{2}$ c. per ton. Steamers, 40 fr. entering or leaving.

ORAN.

Oran is in lat. $35^{\circ}42'$ N., long. $0^{\circ}38'$ W. The climate is healthy.

Population.—106,520.

Exports.—Wheat, barley, oats, cotton, wool, seeds, vegetable fibre, esparto, wine, cattle, sheep, hides, tobacco, etc.

Algeria—Oran (*continued*).

Accommodation.—There is an excellent harbour for vessels drawing as much as 25 ft. of water. The least depth of water in the Old harbour is 18 ft., and the average depth in the new harbour is 30 ft. It is protected by two breakwaters; the N. and S. one is 1,080 ft. long, and the E. and W. one 3,375 ft. long. Large vessels loading grass, etc., lie in the outer and more capacious harbour, while small vessels and steamers discharging or loading merchandise, etc., lie in the inner harbour. Vessels bound in should generally keep topsails, jib, and mizzen set, as it is necessary to haul sharp round to the westward when inside the outer mole. Proceeding in from seaward they should steer for the east end of the town, and when the mole becomes visible proceed direct for the east end of it; when within a short distance a pilot will come off, or they should heave to until they get one. The area of the harbour is 75 acres, and the depth at the entrance is from 39 to 45 ft. The quayage is 6,440 ft. long with a depth alongside of from 16½ to 25 ft. The anchorage is good and there is no bar. Coal can be supplied from 60 to 80 tons per hour. There are two cranes on the quay to lift 8 and 15 tons respectively. There is a floating derrick to lift up to 10 tons. There is a slipway to raise vessels of 100 tons, and ordinary repairs can be carried out.

Vessels moor in the outer harbour with two anchors down, and a warp out astern leading to the mole. A small steamer will sometimes assist to tow in or out when specially required.

The best time to leave the harbour is about 3 a.m., as there is always a land breeze from 2 a.m. to 6 a.m., and after that time the sea-breeze sets in.

Cargo is brought alongside in lighters.

The new harbour is now being extended, as also are the quays, and the largest steamers afloat will be able to lie in the new docks now under construction. The construction of a dry dock, 250 metres (812 ft.) in length, is also under consideration.

Mers-el-Kebir, about 3 miles W. of Oran, is a good and safe natural harbour, and vessels at anchor are almost completely land-locked. Petroleum for Oran is discharged here and it is the quarantine station for that place.

Oran has become of late years a port of call for the bunkering of steamers.

Pilotage.—Steamers, in and out, 4 c. per reg. ton; sailing vessels, 8 c.

Port Charges.—**Quay Dues and Sanitary Dues:**—See **Algeria.**
Town Dues:—From foreign ports, 95 c. per net reg. ton, loading and or discharging. **Tonnage Dues:**—35 c. per reg. ton; if only part of the cargo is loaded or discharged, 35 c. per ton of cargo. **Towage:**—According to agreement, 30 to 35 fr. for a vessel of about 200 tons. **Brokerage:**—Clearance, 40 fr.; agency, 125 fr. Chartering commission, 4 to 5 per cent. **Mooring:**—10 to 15 fr. **Water Tank:**—3 fr. per 250 gallons, f.o.b. **Ballast:**—1 fr. 50 c. to 2 fr. per ton, f.o.b. **Discharging:**—1 fr. 25 c. per ton alongside. (The tons are bills of lading ton less 2 per cent.) **Labourers:**—5 fr. per day. Discharging coal or fuel, 1 fr. 25 c. per 1,000 kilos.; other goods, 75 c. to 1 fr. 25 c. per 1,000 kilos. Loading, 75 c. to 1 fr. 25 c. per 1,000 kilos. Arrivals from French Mediterranean ports are free from Health and Quay Dues, but are always subject to Town Dues. **Coal:**—Can be had at all times at a reasonable price. **Provisions:**—Meat is about 6d. per lb.; vegetables, fruit, and eggs are plentiful and reasonable. Ship's biscuits good, and about 22s. per cwt. Soft bread, 4d. per 2 lb. loaf.

Algeria—Oran (continued).

Water is good, and may be had by the ship's boat free, or may be brought to the ship by a hired water-tank. Salt provisions cannot always be secured, occasionally some come across from Marseilles.

Pro Forma Charges on a steamer of 845 reg. tons with a cargo of coal inwards :—

	Fr.	c.
Stevedore, 1,711 tons of coal at 1 fr. 25 c.	2,139	00
Sanitary dues, 10 c. per ton	84	50
Passport	1	25
Pilotage, 4 c. per reg. ton	34	05
Mooring, fixed rate	15	10
Boat hire, 1 day	5	00
Quay dues, 50 c. per reg. ton	423	05
Toll dues, 35 c.	296	05
Clearance, in and out	40	00
10 tons fresh water	30	00
Custom House stamps	1	20
Agency	125	00
	3,194	20 = £126 14s. 6d.

Pro Forma Charges on a steamer of 805 reg. tons loading grass :—

	Fr.	c.
Pilotage	32	20
Mooring the ship	15	10
Sanitary dues	80	50
Entry and clearance at Custom House	40	00
Stamps on bills of lading	2	40
British Consular fees	22	20
Telegrams	2	40
Postages and petties	12	75
Butcher's bill	121	50
Stevedore's bill, 723½ tons at 1 fr. 25 c.	904	35
Agency fee	125	00
Statistical fee, 10 c. per ton and stamp	72	45
Passport	1	25
Fresh water, 6 tons at 3 fr.	18	00
	1,450	16 = £57 10s. 8d.

PHILIPPEVILLE.

Philippeville is in lat. 36°50' N., long. 6°57' E.

Population.—26,050.

Imports.—Coal, deals, timber, manufactures, etc.

Exports.—Barley, wheat, wool, skins, sheep, cattle, wine, fruits, cork-wood, lead ore, copper ore, and calamine.

Accommodation.—The port is formed by a breakwater about 5,200 ft. long, stretching from Cape Skikda in a line nearly parallel to the coast W.N.W. The second breakwater, stretching from the north, narrows the entrance from the west to about 900 ft. The whole area of the port is about 125 acres, divided into an inner and outer harbour by a wharf, upon which is built storehouses, belonging to the regular lines, and also the offices of the harbour master and the health officer. The total quayage available for ships to discharge direct is about 3,000 ft., and the depths vary from 19 ft. 8 in. to 21 ft. maximum alongside the quays, but the maximum depth is only available for a length of about 300 ft. Vessels invariably discharge alongside the quay, upon which there is a double line of rails. There are three

Algeria—Philippeville (*continued*).

floating derricks to lift 10, 15 and 40 tons respectively. Vessels loaded with petroleum are bound to anchor in the outer harbour. The entrance is very easy either by day or night. Two red fixed lights are placed during the night—one on the point called Chateau Vert, and the other on the slope of the Mamelon Skikda—to indicate the entrance. The first light (Chateau Vert) is on a square house, 38.55 metres (125 ft.) above the level of the sea. Range, 7 miles. This light illuminates an angular space of $47^{\circ}30'$, limited towards the east by the end of the large jetty, and towards the west by the dangers in the neighbourhood of the Macaque Islet. The second light (Skikda) is on a square house between the Barracks and the Fort, 78.50 metres (255 ft.) above the level of the sea. Range, 7 miles. This light illuminates an angular space of $15^{\circ}50'$. Mariners wishing to enter the port at night ought, after having made out the channel of the Srigina Island, to direct their course to the Chateau Vert light until the Skikda light comes into view, when they will make for the latter. When they have lost sight of the red light of the Chateau Vert, they may be certain of having doubled the end of the jetty and of being inside. The entrance is to the westward.

Pilotage.—Steamers :—3 c. per reg. ton in and 1 c. per reg. ton out
Sailers :—6 c. per reg. ton in and 2 c. per reg. ton out.

Port Charges.—Steamers coming in ballast from a foreign port to load pay : **Health Dues**, 10 c. per ton, and **Port Dues**, 25 c. per ton of goods taken on board ; steamers from a French port pay port dues only. Steamers discharging pay 50 c. per ton merchandise for port dues. **Quay Dues** :—50 c. per ton of merchandise discharged, and in proportion to a vessel's net reg. ton. The Quay Due is 25 c. when goods come from Algerian ports. Coal and patent fuel, 25 c. per ton. Animals as 1 ton per head, sheep and goats five to the ton. **Beef and Mutton** :—1 fr. 25 c. to 1 fr. 40 c. per kilo. **Bread** :—30 c. to 35 c. per kilo.

Pro Forma Charges on a steamer of 600 reg. tons, coming from the United Kingdom, with a cargo of 1,000 tons of coal to discharge :—

	Fr.	c.
Quay dues, 25 c. per ton discharged	250	00
Health dues, 10 c. „	60	00
Port dues, 50 c. „	500	00
Pilotage, in and out, 4 c. per reg. ton	24	00
Mooring and unmooring, fixed	15	00
Customs, clearance in and out, fixed	40	00
Consular fee, 2s. 6d.	3	15
Broker, collecting freight and assistance	100	00
Stevedore, discharging 1,000 tons at 1 fr. 25 c.	1,250	00

2,242 15 = £88 19s. 3d.

STORA.

Stora is in lat. $36^{\circ}51'$ N., long. $6^{\circ}53'$ E.

The road of Stora has a good anchorage in 6 fathoms on a sandy bottom. It is situated at the extremity of the gulf of the same name, between Cape Ferro and Cape Bougaron. Vessels anchoring in the bay should be provided with good anchors and cables. The anchorage is sheltered from the W. and N. W., but quite open to the N.E.

Stora, which was formerly the anchorage for vessels bound for Philippeville, has been quite abandoned since the completion of the harbour at Philippeville. It is now only a fishing station.

Algeria.

TENEZ.

Tenez is in lat. $36^{\circ}29'$ N., long. $1^{\circ}20'$ E.

Population.—2,500.

Accommodation.—The town of Tenez is situated in a gulf closed by the high lands of Cape Tenez, and is exposed to winds from N.E. to W. The nature of the coast and bottom renders the sea exceedingly rough; the bottom being of muddy sand, forms good holding ground.

The port is situated between the town and the lighthouse of Cewou, at a distance of 2,200 yards from the town and 4,400 yards from the light. It has a superficial area of 60 acres and an average depth of 23 ft. Ships of 260 to 290 ft. in length can moor with ease and safety in this port. Alongside the mole, where goods are discharged, there is only $11\frac{1}{2}$ ft. of water. The port is composed of two moles or jetties built out from the land; the eastern jetty, built in a straight line towards the N.W., and the other, built at the base towards the N.W., turns slightly towards the N., joining the islands situated at 2,203 ft. from land, then turns abruptly towards the E. The first of these jetties is 1,040 ft. in length; the second, 2,840 ft.

The ends of these two jetties are at a distance of 491 ft. A breakwater 1,308 ft. in length, from E. to W. outside the port, protects the entrance. It is completed for a length of 650 ft. and is apparent for another 325 ft. The port possesses a small mole built of stone, which vessels can get alongside in all weathers. There is a slipway in an inner creek of the port.

A railway between Tenez and Orleansville is being constructed. There are no pilots at Tenez, vessels are brought in by men of the port, fees being as may be arranged.

There are no sworn brokers. Lighterage is at the rate of 1 fr. 50 c. per ton.

EGYPT.

Egypt is the lower portion of the Nile valley, and although nominally a dependency of Turkey is practically controlled by Great Britain. It has an area, excluding the Sudan, of about 400,000 square miles, of which, however, only about 12,000 square miles, being cultivated, may be said to be settled territory. The population according to the 1907 census numbers 11,287,395.

Commerce.—The total trade of Egypt, exclusive of specie, amounted during the year 1907 to £55,479,310 sterling, of which £26,765,796 were imports and £28,713,514 exports. The country of origin of all imports, and the final destination of exports, has to be declared on discharging or loading. The Customs duties are levied upon an *ad valorem* basis, the declared value being accepted by the authorities, who always retain the right to re-value should they consider it desirable to do so. Any attempt at under valuation of goods landed in Egyptian ports is met by the infliction of heavy fines. In order to facilitate Customs operations the administration publish from time to time tariffs showing the value of common articles of importation. These values include the cost in the country of origin, plus charges for transport, freight, insurance, etc.

Internal Communications.—The Nile is the chief medium of communication from the Sudan to Alexandria, while in the delta of the river a system of canals radiates in every direction. Railways now run from Alexandria, Port Said, and Suez to Cairo, with continuing lines following the course of the Nile to Khartoum and Fashoda, a section which will in the future form a part of the great trunk line of the Cape to Cairo railway. The total length of the lines now open for public traffic amounts to a little over 1,500 miles, the whole of which belongs to and is worked by the State. In addition to these State lines there are a number of light railways owned by private companies, and which have been specially constructed for the purpose of opening up the sugar estates and cotton plantations in the Nile valley. The telegraph service is the property of the Egyptian Government, as is also the trunk telephone line between Alexandria and Cairo. A State postal service has been established and is worked on modern methods.

Currency, Weights and Measures.—The unit of the monetary system of Egypt is the Egyptian gold £ of 100 piastres of the value of £1 0s. 6½d. The fixed rate of exchange is 97½ piastres=£1 British sterling. The coins in circulation in addition to the £ piece include 20, 10, 5, 2, and 1 piastre pieces in silver, 1, ½, ¼, and 1⁄10 piastre pieces in nickel, 2⁄10 and 4⁄10 piastre pieces in bronze. The gold coins, of which, however, few are now to be had (the English sovereign circulating almost exclusively in Egypt and the Sudan), are legal tender up to any amount. Silver coins may be offered in payment of any sum up to 200 piastres, nickel and bronze being legal in payment of sums not exceeding 10 piastres in any one payment. Government accounts are kept in £E and milliemes, 1,000 milliemes=£E.

Egypt.

Since January 1, 1876, the use of metric weights and measures in Egypt has been compulsory in all public and administrative transactions. The railways in Egypt are marked in British statute miles; the Suez Canal is marked in nautical miles and tenths.

EGYPTIAN WEIGHTS AND MEASURES.

1 oke (400 dirhems)	= 2.75 lb.
1 kantar (36 okes)	= 99 lb.
1 diráa beledi (for stuffs)	= 22.8 inches.
1 mimári (for building)	= 29.5 "
1 ardeb	= 5.4 bushels.

Water is sold by the ton of 1 cubic metre. Coal is weighed by the British ton.

Light Dues in Egyptian Mediterranean Ports.—All vessels up to 800 tons (converted into Turkish tons, which ton equals 792 okes), 5 milliemes per reg. ton; over 800 tons, $2\frac{1}{2}$ milliemes per reg. ton.

Light Dues in Egyptian Red Sea Ports.—All vessels up to 800 tons (converted as above mentioned), 10 milliemes per reg. ton; above 800 tons, 5 milliemes per reg. ton.

Ships carrying mails receive 5 per cent. reduction; coasting ships 25 per cent. reduction; men-of-war, pleasure yachts, and transport ships the property of the Khedival Government are free. Ships having cleared from an Egyptian port, and being forced on account of bad weather or accident to return, are exempted from further payment of light dues, provided that they have not touched any other port.

ABUKIR.

The entrance to Abukir Bay is in lat. $31^{\circ}17'$ N., long. $30^{\circ}2'$ E., about 10 miles N.E. of Alexandria.

Accommodation.—The town of Abukir stands on the E. side of a spit of land, at the extremity of which there are numerous rocks and shoals. The inner anchorage, about a mile off the town, is in about 18 ft. of water; the outer anchorage has from 22 ft. to 26 ft. of water, and is about 3 miles distant. Both these anchorages are exposed to N.E. winds, and should not be attempted without the aid of a pilot.

ALEXANDRIA.

Alexandria is in lat. $31^{\circ}11'$ N., long. $29^{\circ}54'$ E., and is situated on a neck of land formed by the Mediterranean and the Mariout Lake.

Population.—332,245.

Imports.—Cotton-piece goods, coal, ironware, timber, flour, leaf tobacco, rice, petroleum, cattle and sheep, ironmongery, silk goods and raw silk, woollen goods, drapery, clothing, cotton yarns, and machinery.

Exports.—Cotton, cane sugar, cotton seed, onions, beans, quails, oilcakes, cigarettes, and eggs.

Accommodation.—The harbour at Alexandria is a perfectly safe one, being protected by a fringe of reefs. Through these reefs two passages have been dredged—the Great Pass and the Boghaz Pass. The Great Pass is 600 ft. wide, 35 ft. deep at low water, and 1 mile long; Boghaz Pass being 300 ft. wide, with a depth at dead low water of 30 ft. The Great Pass

Egypt—Alexandria (*continued*).

only is in use during the night-time, passage through the Boghaz Pass being prohibited from sunset to sunrise. Only one steamer is permitted to enter the same pass at a time, vessels entering the port having priority over those leaving it. The regulations governing the navigation of these passes provide that before entering a pass from seaward, steamers must, between sunrise and sunset, hoist the International code signal, R.L.M. (wait), and sound their whistles. After sunset, a blue light must be burnt, and whistles sounded by all steamers approaching the passes, whether inwards or outwards. If an out-going steamer is in a pass at the time an in-coming steamer arrives at the sea-end of the same pass, the out-going ship will hoist R.L.M. during day-time, or burn a blue light at night, sounding her whistle. The arriving steamer will then wait until the pass is clear. If during the day-time the passes are signalled as being in use, out-going steamers must not approach to within $\frac{1}{2}$ a mile of the Great Pass pivot buoy (if using the Great Pass) or El Kot (if using Boghaz). Care must also be taken not to lie with leading marks in line, thus obscuring them from the steamer entering. In case of the passes being signalled as in use, the out-going steamer must stop opposite Gabbari signal station until the signals indicate that all is clear, after which she can proceed.

The following signals are exhibited at Gabbari signal station in connection with the passes :—

BY DAY :—

Both passes clear : *One black ball.*

Vessel in Great Pass : *Two horizontal balls.*

Vessel in Boghaz Pass : *Two vertical balls.*

Vessel in both passes : *Four balls : Two horizontal, two vertical.*

BY NIGHT :—

Great Pass clear : *Two white lights, vertical.*

Vessel in Great Pass : *Two red lights, vertical.*

The inner harbour has an area of 464 acres, with a maximum depth of 40 ft. The outer harbour is 1,400 acres in extent, and has a maximum depth of 60 ft. There is 8,865 ft. of quayage with a depth of 20 to 26 ft. alongside, and a new jetty (Quai K) 1,586 ft. long, with a depth alongside of $22\frac{1}{2}$ ft. There is 2,735 ft. of quayage with a depth of from 12 to 15 ft. alongside. There are three cranes to lift from 3 to 6 tons each, and three floating sheers : two to lift 8 and one to lift 20 tons ; also one floating crane to lift 40 tons. The anchorage is good in both the inner and outer harbours, and there are no tides. The existing breakwater has been extended, and another breakwater built out from the Quarantine Harbour at Mex, which will admit of a passage between the ends of the two of about 984 ft. Three wharves for the discharging of timber have been built on the Gabbari coast, and the coal mole has been widened to 443 ft. Quai K has also been lengthened and widened. There are six coal dischargers, capable of unloading from one ship 1,500 tons in 10 hours. There is a dry dock 520 ft. long, 58 ft. wide across the coping at the entrance, and 73 ft. 6 in. wide in the main portion. There is 23 ft. water over the sill at high water, and from the coping to the sill the dock measures 29 ft. The channel has approximately 20 ft. of water in it, but active dredging operations are being carried out, and the depth being increased 12 in. There are two slips in the Government Arsenal available for small vessels up to 260 and 90 tons d.w. respectively.

Time Signals.—A black ball is hoisted at the Signal Station,

Egypt—Alexandria (continued).

Fort Napoleon, and dropped at noon Egyptian standard time, equal to 22 h. 0 m. 0 s. Greenwich mean time and 23 h. 59 m. 33 s. local mean time. A gun is also fired from Fort Caffarelli at this time. A second signal is made at 1 p.m. Alexandria mean time, equal to 23 h. 0 m. 27 s. Greenwich mean time.

Pilotage.—Compulsory both inwards and outwards. Steamers drawing 26 ft. or less, 1,600 milliemmes equals £1 8s. 9d.; above 26 ft., 800 milliemmes additional. Regular postal steamers one-sixth less.

					£	s.	d.
Sailing vessels,	10 to 50	tons,	££0-300 mil. equal	.	.	.	0 6 2
"	51 "	100 "	0-500 "	.	.	.	0 10 3
"	101 "	250 "	0-625 "	.	.	.	0 12 8½
"	251 "	500 "	1-000 "	.	.	.	1 0 6½
"	501 tons and upwards,		1,200 mil. equal	.	.	.	1 4 7½
Night service,	50 per cent.		extra.				

Harbour pilots, with boats containing four native seamen, are supplied at a charge of 8s. in fine weather and 12s. in bad weather. **Towage** :—£16 per day, or £8 per half day. Tow ropes (if required) £1 additional.

Port Charges.—Tonnage Dues :—If loaded, 1½ pte. per ton both inwards and outwards. If in ballast, 30 paras both inwards and outwards. Coasting vessels, loaded 30 paras, in ballast 15 paras. **Light Dues** :—See Egypt.

Vessels which have paid port dues and return to the port on account of bad weather or damages are exempt from payment a second time if they have not touched at any other port, or performed any commercial operation before quitting the port a second time. To claim this exemption, the captain must have delivered to the port authorities a declaration to the above effect, made before his Consul within 24 hours of arrival, and another before departure. Vessels are allowed to use the port for repairs only, without payment of port dues, if a declaration is made before the Consul within 24 hours of arrival, and delivered to the port authorities, to the effect that such repairs are the sole object of the ship's arrival, and another declaration similarly made and delivered to the port authorities before departure, that the ship has not, during her stay, embarked or disembarked coal, passengers, or merchandise. The time allowed for repairs must also be fixed by the captain of the port, and not exceeded. Vessels are also allowed to use the outer harbour as a harbour of refuge during bad weather, without payment of port dues, on condition that they do not receive pratique or have any communication with the shore.

SANITARY DUES.

		Dues payable by all Vessels using the Port.	
		Ptes.	
Vessels up to	25 tons	.	4
From	26 to 75 tons	.	6
"	76 " 125 "	.	10
"	126 " 200 "	.	13
"	201 " 250 "	.	20
"	251 " 375 "	.	34
"	376 " 500 "	.	41
"	501 " 625 "	.	50
"	626 " 750 "	.	58
"	750 " 1000 "	.	66
Above 1,000 tons	.	.	66

N.B.—Postal vessels are exempt from payment of sanitary dues.

Egypt—Alexandria (continued).**QUARANTINE DUES.**Daily Dues paid by all Vessels
undergoing Quarantine.

	Ptes.
Vessels up to 25 tons	13
From 26 to 75 tons	16
" 76 " 125 "	25
" 126 " 175 "	34
" 176 " 250 "	41
" 251 " 300 "	50
" 301 and upwards	58

N.B.—In addition to the above, the ship pays for the keep of each of the sanitary guards placed on board, as well as their salaries, at the rate of 20 ptes. = 4s. per day; also for the expenses of the sanitary boat, at the rate of 30 ptes., or about 6s. 2d. per day.

Mooring Dues :—If at buoy, 50 ptes. per day of 24 hours in the inner harbour; £E 1 in the outer harbour. **Accostage Dues** :—If moored to the quays: If temporary berth, and broadside to the quay, 2 ptes. per metre of vessel per day (from noon to noon). If temporary berth, and end on to the quay, 40 ptes. per day irrespective of size. If permanent berth, 650 ptes. per annum per metre of the quay occupied. **Hire of Lighters** :—Lighters of 30 tons, 2s. to 5s. per day. **Stevedores** :—Loading, from 2½d. to 3½d. per ton. **Labour** :—Discharging coal at the quays, about 2½d. to 3½d. per ton. (Coal is almost exclusively discharged from ships alongside the quays, and is weighed in trucks on the railway after discharge.) **Ballast** :—Earth, 2s. 6d. per ton, put alongside. **Water** :—Water is supplied by floating tanks at 2s. 6d. per ton; or the ship's casks can be filled at a charge of 1s. per ton.

Pro Forma Charges on a steamer of 1,000 tons net register, arriving with cargo of coals, and sailing with 2,000 tons cargo :—

	Ptes.	pa.
Pilot in	156	00
Harbour pilot in	40	00
Port dues—international tonnage—1,200 tons, at 3 ptes. per ton	3,600	00
Light dues	950	00
Accostage dues, 170 ptes. per day, say 8 days	1,360	00
Buoy dues, 50 ptes. per day, say 8 days	400	00
Doctor's fees (if any), £2 2s.	204	30
Consular fees, about	97	20
Stevedores, discharging 2,000 tons at 3d., £25	2,437	20
" loading 2,000 tons at 3d., £25	2,437	20
Quarantine and guardian fees	97	20
Harbour pilot out	40	00
Pilot out	156	00
Sundry petties and Custom House clearance, about	160	00
Brokerage, entrance and clearance	1,024	00
3 per cent. commission on freight, as per manifest—2,000 tons at 8s. 6d., £850—97½, £25 10s.	2,486	10
	15,645	20 = £160 9s. 5d.

Pro Forma Charges on a steamer of 860 tons net register, arriving in ballast, and sailing with 1,500 tons cargo :—

	Ptes.	pa.
Pilot in	156	00
Harbour pilot in	40	00
Port dues—international tonnage—965 tons, at 2½ pte. per ton	2,171	10
Light dues	662	00
Quay dues, 148 ptes. per day, say 3 days	444	00
Buoy dues, 50 ptes. per day, say 1 day	50	00
Consular fees, about	97	20
Doctor's fees (if any), £2 2s.	204	30
Stevedores, loading 1,500 tons cargo, at 3d. per ton, £18 15s.	1,828	05
Quarantine and guardian fees	97	20
Harbour pilot out	40	00
Pilot out	156	00
Carried forward	5,945	85

Egypt—Alexandria (*continued*).

	Ptes.	pa.
Brought forward	5,945	85
Sundry petties and Custom House clearance, about	160	00
Clearing fee, £5 5s.	512	00
3 per cent. commission on freight, as per manifest, 1,500 tons, at 8s. 6d., £637 10s.—at 97½, £19 2s. 6d.	1,864	30
	8,482	15 = £86 19s. 6d.

COSIRE.

Cosire, or Kosseir, is in lat. 26°8' N., long. 34°10' E., on the W. shore of the Red Sea.

Population.—About 3,000.

Accommodation.—Vessels can anchor in 5 fathoms of water, about 60 yards from the shore, and are protected from E. winds. There is a wooden pier about 80 yards long.

DAMIETTA.

Damietta, in lat. 31°26' N., long. 31°48' E., is situated on the Nile, 10 miles from the mouth of the eastern branch of that river, and 14 miles from the anchorage of vessels.

Exports.—Rice, dried fish, dates, coffee, beans, wool, cotton, hides, sheep-skins, cereals, etc.

Accommodation.—The Damietta branch is closed almost entirely by a treble line of dangerous breakers formed by sandbanks, between a few of which vessels drawing 6 ft. of water and under may occasionally find a passage into the river. Vessels of a deeper draught must anchor in the offing, in about 6 fathoms of water, about 6 miles from the lighthouse.

Vessels from Europe do not trade here on account of the shallowness of the water.

Port Charges.—Port Dues:—Ships of 72 tons measurement or less, 117 milliemes in and the same out. Vessels of more than 72 tons measurement, 20 milliemes per cubic foot. Coasting vessels, 20 milliemes per cubic foot on entering and leaving. **Permit of Departure:**—30 milliemes per vessel. **Legalization Fees:**—250 milliemes per document. **Copy Fees:**—460 milliemes per copy, including stamps. **Stamp Fees:**—30 milliemes per single sheet. **Sale Fees:**—2½ per cent. on the value. **Measurement Fees:**—386 milliemes per ship. **Light Dues:**—Vessels of 10 tons or over, 5 milliemes per Turkish ton. Sailing coasters, 375 milliemes once a month. Sailing vessels working between Port Said and Damietta are exempted from light dues.

KAMARAN.

Kamaran harbour, in lat. 15°20' N., long. 42°30' E., is on Kamaran Island, and is the quarantine station for the Red Sea. Vessels anchor in 47 ft., two cable lengths from the shore.

PORT SAID.

Port Said, in lat. 31°14' N., long. 32°16' E., is at the Mediterranean entrance of the Suez Canal.

Population.—50,000.

Egypt—Port Said (*continued*).

Imports.—Coal, spirits, metals, building materials, machinery, petroleum, motor spirit, gunnies, manufactured goods, food-stuffs, etc.

Exports.—Cotton, cotton seed, cigarettes, hides, and salt.

Accommodation.—The coast in the neighbourhood is unusually low, the lighthouse tower and shipping are the only objects seen from the offing. At 6 miles to the W. the coast is marked by Fort Ghemil, a low square building standing by itself, but to the E. of the port there is nothing to mark the low shore. The current is uncertain, depending on the wind; its general direction is to the E., at from $\frac{1}{2}$ to $1\frac{1}{2}$ knots per hour. Owing to the current and low shore, more than usual caution is necessary in approaching the harbour. The best anchorage is in $5\frac{1}{2}$ fathoms, with the green light in line with the high light, or a little open either way. The bottom is mud and very good holding ground. The pilot boats carry by day the international pilot signal, viz., the letter "S," and by night three red lights, vertical. There is a good straight channel 50 yds. wide at the narrowest point that leads up to the harbour. The depth of water in the channel and port generally is 34 ft. The harbour has a depth of 27 ft. The floating dock is 295 ft. long over all, 61 ft. wide at the entrance, and 18 ft. on the blocks. The lifting power is 3,000 tons. There are two patent slips with lifting power of 300 tons each. Extensive repairs can be executed. There are three floating sheers, one to lift 8 tons and two to lift 3 tons. There are three cranes to lift 35 tons, one to lift 8 tons, and two to lift 6 tons. The above belong to the Suez Canal Co., and have from 5 to 30 ft. alongside. There is another private crane of 2 tons capacity.

The usual rate of discharge is 400 tons per day.

Time Signals.—A black ball, hoisted on an iron lattice-work mast 5 minutes before the signal is made is dropped at 8 a.m., noon, and 4 p.m. Egyptian standard mean time, equal to 18 h., 22 h., and 2 h. Greenwich mean time, and 20 h. 9 m. 15 s., 0 h. 9 m. 15 s., and 4 h. 9 m. 15 s. local mean time.

Pilotage.—Compulsory. Steamers, 25 fr.; sailing vessels, 10 fr.; at night time double the above rates are charged.

Whatever length of time ships may stay in the harbour of Port Said, and whatever commercial operations they may transact there, total remission will be made of the pilotage charges for day-time entrance, or remission of half the charge for night-time entrance, if they decide to go through the canal. The signal for a pilot for a vessel in the roads is lights exhibited at the fore-masthead, followed either by rockets or blue lights. If pilot can come out it will be answered by a rocket; if pilot cannot come out by a blue light.

Port Charges.—Light Dues :—Steamers arriving from the Mediterranean and after discharging returning to the Mediterranean, 13 centimes per ton up to 800 tons (Turkish measurement), and for every additional ton .065 centimes. Steamers proceeding through the Suez Canal, 26 centimes per ton up to 800 tons, and for every additional ton 13 centimes. **Towage :**—Out of port, 25 c. per ton. **Discharging Coal :**—7d. per ton. **Mooring and Unmooring :**—12 fr. 50 c. **Water :**—1s. 8d. per ton. **Provisions :**—Prices vary, but Australian frozen meat can be obtained at $5\frac{1}{2}d.$ to $6\frac{1}{2}d.$ per lb.; fresh meat, 5d. per lb.; bread, $2\frac{1}{2}d.$ per lb. Vegetables vary, generally about 2d. per lb. Plenty of dry stores are obtainable. **Anchorage**

Egypt—Port Said (continued).

Dues :—Vessels remaining in the port more than 24 hours pay 2 centimes per ton per day.

Pro Forma Charges on a British steamer of 5,599·54 gross tonnage, 3,626·06 net tonnage, and 4,224·75 canal tonnage, with a cargo of 7,338 tons of coal :—

	Fr.	c.	£	s.	d.
Discharging 7,191 tons at 7d. per ton	—	—	209	14	9
Assistant stevedore	—	—	2	0	0
8 winchmen at 4s.	—	—	1	12	0
Mooring and unmooring	—	—	0	10	0
Doctor's fee	—	—	1	10	0
Rat screens	—	—	0	10	0
British Consular fees for articles	—	—	0	2	6
Telegrams	36	20	—	—	—
Light dues and permit of departure	290	00	—	—	—
Health office dues in by day	38	40	—	—	—
Pilotage in by day	25	00	—	—	—
Pilotage out by night	50	00	—	—	—
Harbour dues, 2 centimes per ton per day after first 24 hours, on canal tonnage 4,224·75 tons, in port 16 days	1,267	43	—	—	—
Customs clearance fee	—	4	00	—	—
Subscription to British hospital (optional)	—	—	0	10	0
	1,711	03	—	—	—
Exchange at 25·225 fr. per £.	—	—	67	17	9
Clearance and attendance	—	—	2	0	0
			£286	7	0

PORT SUDAN.

Port Sudan is in lat. 19°20' N., long. 37°4' E.

Imports.—Manchester goods, cottons, iron, hardware, sugar, grain, oilmen's stores, provisions, and general manufactures.

Exports.—Gum arabic, cotton, ivory, mother-of-pearl shells, hides, skins, sesame, salt, senna, etc.

Accommodation.—There is good anchorage for the largest vessels in 14 fathoms opposite the N.W. arm, about $\frac{1}{2}$ a mile from the entrance. The North arm extends $2\frac{1}{2}$ miles, with a depth of from 8 to 14 fathoms, but it is narrow. Quays have been constructed here capable of berthing five vessels, and equipped with five large electric cranes and a large coal transporter plant. There is a temporary quay for steamers with Government stores. The permanent quay wall of 500 metres (capable of accommodating five steamers) will be completed some time in April.

Railway connection by the Suakin-Berber Railway with the interior of Egypt and the Nile.

Bunker coal and supplies for shipping can be obtained, but they are dear.

Pilotage.—Compulsory. Suez Canal tonnage—From 10 to 1,000 tons, £1 10s. 9d.; from 1,001 to 2,000 tons, £2 1s., entering and leaving. Between sunset and sunrise, 50 per cent. extra.

Port Charges.—**Mooring or Unmooring :—**£1 0s. 6d. **Labour :—**Plentiful; 2s. per day. Customs duties on imports are levied at the rate of 8 per cent. ad val.; on coal and timber, 4 per cent. ad val.; on exports to Europe, 1 per cent. ad val., to any part of the Ottoman Empire, 8 per cent. **Boat Hire :—**£1. **Wharfage :—**Not charged until the quays are completed. **Clearance Fees :—**£5. **Consular Fees :—**7s. 6d. for noting protest; 10s. for endorsement of the ship's articles. **Light Dues :—**Not charged at present. **Ballast :—**2s. per ton free alongside.

Egypt.

RAWEIYA.

Raweiya, or Ras Rawai, or Mahomed Goul is in lat. $20^{\circ}55'$ N., long. $37^{\circ}0'$ E.

Accommodation.—The entrance to this port for vessels over 200 tons is south of Makawar Islands, and vessels should endeavour to go in past the reefs in the forenoon, so as to have the sun astern, when all reefs will be distinctly seen ahead as the ship goes in. Anchorage will be found with the Port at Mahomed Goul bearing W. by S. $\frac{1}{4}$ S., and the small sandy islet of St. Fillan's bearing S.E. (both magnetic), in 6 to 7 fathoms, good holding ground.

There is very little trade done here now, what there is being simply of a coasting nature.

SUAKIN.

Suakin, in lat. $19^{\circ}2'$ N., long. $37^{\circ}18'$ E., is situated on the African coast of the Red Sea, upon a small island about 200 yards from the mainland, about 2 miles from the entrance of the channel leading to it.

Population.—About 8,000.

Imports.—Hardware, provisions, and piece goods.

Exports.—Cotton, gum, senna, and skins.

Accommodation.—The harbour is safe for the largest vessels. Landing and shipping operations are carried on with dispatch by means of wooden lighters.

Since the opening of Port Sudan, this has ceased to be the port of transit for goods directed to the interior.

SUEZ.

Suez, in lat. $30^{\circ}5'$ N., long. $32^{\circ}23'$ E., is situated on the northern extremity of the Gulf of Suez, 76 miles E. of Cairo. Distance from Liverpool by the Cape, 11,285 miles; by the Canal, 3,310 miles. Climate healthy, but hot.

Population.—17,000.

Imports.—Gunnies, indigo, coffee, wheat, dried dates, sugar, pepper, carpets, manufactured silks, cotton twist yarn, cattle and sheep, chick-peas, charcoal, tea, etc.

Exports.—Gum, wheat, ostrich feathers, skins, cigarettes, ivory, sugar (refined Egyptian), maize, silk and silk thread, lentils, beans, and soap.

Accommodation.—Spring tides rise 7 ft. and neaps 4 to 5 ft., but this is greatly influenced by the winds and seasons, higher tides ranging during the winter than during the summer months, owing to the southerly winds which prevail in the southern part of the Red Sea in winter, and the northerly winds which prevail over the entire length of the sea in summer. The bay is open to the south, but well protected to the east, north, and north-west. The best anchorage for large vessels is in 5 to $5\frac{1}{2}$ fathoms with Kalah-Kobireh lighthouse bearing S.W., and the outer end of Canal breakwater E. $\frac{1}{2}$ S., bottom stiff clay. The wet docks, or north and south basin, which form the port of Suez, are named Port Ibrahim. The north basin has 23 to 26 ft. water and the south 20 to $22\frac{1}{2}$ ft.; vessels drawing 26 ft. can be berthed alongside the quay in the north and 22 ft. in the south basin. A stock of about 6,000 tons of coal kept. Vessels coal from the wharf or from lighters.

Egypt—Suez (continued).

There is a dry dock 406 ft. long over all, 74 ft. wide at the entrance at the high spring level, and 23 ft. on the sill at high springs. Ordinary repairs can be executed. There is a floating derrick to lift 25 tons.

There is 4,878 ft. of quayage and one jetty 1,830 ft. long. This jetty has been undermined by the action of the sea water, but is being repaired and lengthened. The passage at Newport Rock and the spit buoy is being dredged to a uniform depth of 33 ft. The width of the entrance to Port Ibrahim is 328 ft., but only 160 ft. has a depth of $26\frac{1}{2}$ ft.

Pilotage.—Compulsory. £E 2 per vessel inwards; £E 1 out.

Port Charges.—Port Dues:—Vessels up to 500 tons, 500 milliemes; from 501 to 1,000 tons, 750 milliemes; 1,001 to 1,500, £E 1; 1,501 to 2,000, £E 1 500 milliemes; 2,001 to 2,500, £E 2; 2,501 to 3,000, £E 2 500 milliemes; 3,001 to 3,500, £E 3; 3,501 to 4,000 and upwards, £E 3 500 milliemes. **Light Dues:**—Vessels up to 800 tons (Turkish measurement), 10 milliemes per ton; for every additional ton, 5 milliemes.

Landing Charges.—For landing cargoes or stores upon any of the quays or on the jetty, per ton commercial measurement, 5 piastres; after 4 weeks' occupation, per ton per week, 20 centimes. Quarantine visit to vessels on arrival, 66 ptes.; and 20 ptes. per day for each guard until receiving pratique. Charge for bill of health, 82 ptes.; visiting bill of health, 41 ptes. Disinfecting vessel when ordered, 91 ptes. A charge of 58 ptes. per day is made on vessels while detained in quarantine. Bills of lading, usual charge, 2s. per set.

Boat Hire.—Between sunrise and sunset.

	Piastres.
From Suez to vessel (roads), single passenger	20
" " " two passengers	each 12
" " " three "	" 9
" " " above three passengers	" 7
" roads to docks, single passenger (exclusive of dock dues)	10
" " two passengers " "	5
" " above two passengers " "	5
If employed by day (exclusive of dock dues)	40

From sunset to sunrise the fares are doubled.

Provisions, etc.—Water filtered alongside, 3s. per ton. Bread, 3d. per lb. Pigeons, 8d. each. Beef or mutton, 7d. per lb. Fowls, 1s. 2d. each. Turkeys, 13s. per pair.

Pro Forma Charges on a steamer of 2,462 tons register, discharging a full cargo of coal at Suez Docks:—

	Fr.	c.
Port dues, 10 days at £E 2-500 = £E 25	648	05
Pilotage in and out, £E 3	77	80
Gratuity to port pilot.	25	00
Health dues, £E 3-460	89	70
Customs dues for working on Sundays, £E 0-500	12	95
Mooring and unmooring in port	25	00
British Consul's fee—depositing articles, 2s. 6d.	3	15
Dispatch money, 10 days at £8 = £80	2,022	05
Agency fees, £5	126	35
	3,030	05 = £120 5s. 5d.

SUEZ CANAL.

The transit through the Canal is open to ships of all nationalities, provided that their draught of water does not exceed 8 metres 53 centimetres (28 ft.), and that they conform to the following conditions:—

Egypt—Suez Canal (*continued*).

Towage is compulsory in the case of :—

1. Sailing ships above 50 tons gross ;
2. Any ship not considered by the officials of the company as fulfilling the conditions necessary for safe navigation ;
3. Ships carrying in bulk any quantity whatever of petroleum or by products of petroleum, having a flash point below 23° C. (73° F.).

In all cases other than the above, ships may demand to be towed or convoyed through the Canal subject to the conditions hereinafter specified. In such cases towing or convoying is not compulsory on the Company, who undertake it only in so far as they have any tugboats disengaged.

The maximum speed of all ships passing through the Canal is fixed at 10 kilometres, equal to 5½ nautical miles per hour.

On all vessels of more than 100 tons gross pilotage is compulsory, but at present (1909) no fee is charged for this service. The captain is held responsible for all groundings and accidents, of whatsoever kind, resulting from the management and manœuvring of his ship by day or by night.

Regulations.—When a ship intending to proceed through the Canal has dropped anchor either at Port Said or Port Tewfik (Suez) at the berth appointed by the harbour-master, the captain must enter his ship at the Transit Office and pay all dues for passage, and, when there is occasion, for pilotage (1), towage and berthing ; a receipt is delivered to him, which serves as a voucher in case of need. The following written information must be handed in by the captain : Name and nationality of the ship, to be identified by exhibiting the ship's papers respective thereto. Name of the captain, names of the owners and charterers, port of sailing, port of destination, draught of water, number of passengers as shown by the passenger list, statement of crew as shown by the muster roll and its schedules, and the capacity of the ship according to the legal measurement ascertained by producing the special Canal certificate, or the ship's official papers. The Company determine the hour of departure of each ship, and therefore no ship can demand as a right an immediate passage through the Canal, neither will any claim be admitted in connection with any delay. All ships ready to enter the Canal must have their yards braced forward, their jib-booms run in and their boats swinging in-board. In addition to their two bow anchors, they must carry at the stern a strong kedge, ready to let go on the pilot's recommendation.

They must also, during their passage through the Canal, have either in tow or ready to float a fitted-out boat carrying a hawser in readiness to be run out at once and made fast to one of the mooring posts on either side of the Canal. All ships, whether made fast in a siding, or moored at any point, or aground in the Canal, must ease their hawsers in order to give free passage to tugs, steam launches, hopper-barges, and any other craft of a light draught that may have to pass them. The captain must set a watch both by day and night ; the men to be in readiness to ease away or cut hawsers, as may be required. All steamers, tugs included, must blow their whistles when approaching the curves of the Canal, also when approaching in either direction boats or lighters, dredgers, or any craft afloat. They must stop when the channel is not clear and pass at a reduced speed all sidings, stone or earth-work yards ; they must also slacken speed, and have their two bow anchors ready to let go, when passing vessels made fast or under way, hopper-barges, dredgers, or any other craft. Whenever a collision appears probable, no ship must hesitate to run aground and thus avoid the collision. The expenses

Egypt—Suez Canal (*continued*).

consequent upon grounding under these circumstances shall be defrayed by the ship in fault. Ships proceeding in the same direction are not allowed to pass each other under way in the Canal. In the case of a ship being allowed to pass another one ahead of her, she must conform with the Company's directions to that effect. Navigation of sailing craft of every description by night is entirely forbidden. Steamers intending to go through the Canal by night must first satisfy the agents of the Company in Port Said or Port Tewfik that they are provided:—

(1) With an electric search-light or search-lights showing the channel 1,200 metres ahead, and so constructed as to admit of rapid splitting up of the beam of rays into two separate segments with a dark sector in the middle.

(2) With electric lights powerful enough to light up a circular area of about 200 metres diameter around the ship.

The agents of the Company decide whether the apparatus fulfil the requirements of the regulations, so that ships provided with them may, without inconvenience, be authorized to navigate the Canal by night. Night transit may, however, be suspended in case of failure or want of power in the lights. Navigation by night by steamers unprovided with electric light is only authorized under exceptional circumstances, the captain accepting entire responsibility, in writing, for any delay, mishap, and damages that may happen to his own ship, as well as for any similar accidents he may cause to other ships in transit or to the Company's craft and plant happening to be in the Canal. Ships navigating under these conditions remain subject to all other rules regarding night transit.

In the event of grounding, the agents of the Company alone have the right to direct all operations by which a vessel is to be floated off again, to unload and tow the vessel, as may be necessary, by means of the plant and stock which the Company has at hand, at the expense of the vessel, unless it be regularly proved that there was an insufficient depth of water in the Canal, or that erroneous direction by the pilot had caused the grounding.

The aforesaid costs of floating, towing, unloading and reloading, etc., must be paid conformably with a statement or estimate drawn up by the Company, before the departure of the ship from Port Said or Port Tewfik.

For the present, however, and until further orders, whenever a ship going through the Canal happens, except in the roads and ports, to ground or stop in consequence of an accident other than collision, the Company, in order to remove the obstruction in the fairway with all possible speed, and to hasten the restarting of the grounded or stopped ship, does not claim from the captains, the consignees, or the shipowners, any reimbursement whatsoever of expenses incurred in refloating the ship or towing her, if necessary, as far as the next siding. If from such siding the ship continues her journey in tow, she must pay towage charges according to the fixed rates.

Navigation Dues.—The net tonnage is the basis for levying the special navigation due, which is at present (1909) 7 fr. 75 c.

Ships in ballast are allowed a reduction of 2 fr. 50 c. per ton on the tariff for transit. Any ship carrying mails or passengers, or having in her holds coal or other merchandise in whatever quantity, is not considered as being in ballast. The charge of 10 fr. per passenger above 12 years of age or of 5 fr. per passenger from 3 to 12 years old, as well as the transit dues, must be prepaid on entering the Canal at Port Said or Port Tewfik.

Egypt—Suez Canal (*continued*).

The berthing or anchorage dues at Port Said, Ismailia, and opposite the Company's embankment at Port Tewfik at the berth assigned to the ship by harbour-master, are fixed at 2 c. per day per ton, whatever be the duration of her stay, but the first 24 hours are not included. These dues will be collected every 10 days.

Claims for errors in the declaration of tonnage or in the levying of the dues must be sent in within a month after the ship's passage through the Canal. After this delay claims are not admitted; no erroneous application of the tariff can ever be brought forward as a precedent against the Company.

Towage.—The charge for towage over the whole length of the Canal is as follows: (1) When towage is compulsory. For steamers, 50 c. per ton of the ship's net tonnage, on condition that they use their propelling power, or keep it in readiness to assist the tug; the maximum charge being 2,500 fr.; for steamers unable to give assistance of their propelling power, or not desiring to do so, and for sailing ships above 400 tons gross, 1 fr. per ton of the ship's net tonnage, the maximum charge being 5,000 fr.

(2) When towage is not compulsory, but takes place at the captain's request: For ships using, or holding in readiness, their propelling power, 1 fr. per ton of the ship's net tonnage; 1,200 fr. being a minimum charge; for ships not desiring to assist the tug with their propelling power, 2 fr. per ton of the ship's net tonnage, 2,000 fr. being a minimum charge.

(3) In the case of ships towed by the Company's tugs no other division than that of one-half of the length of the Canal is allowed—from Ismailia to Port Said being considered one-half on one side, and from Ismailia to Port Tewfik the other half on the other side. When a tug tows a vessel one-half of the length of the Canal only, one-half only of the dues above specified for towage over the whole length is charged.

(4) By way of exception to the above scale of charges, a rate or charge is fixed by private agreement for the towage, whether compulsory or optional, of lighters, dredgers, and floating appliances of any description. Similarly the towage charge for sailing ships with a tonnage of 400 tons gross, or under, is fixed by private agreement. All ships towed must furnish their own warps.

The charges for towage in the roads, by the Company's tug service, to ships applying for tugs, are fixed at 10 centimes per ton of net tonnage: At Port Said, for the distance between the inner docks and the end of the jetties and conversely; at Port Tewfik, the distance between the docks and the roads and conversely: the minimum charge being 25 fr. For towage to a greater distance the charge is fixed by private agreement.

When a ship requires a tug to act as a tender, the charge for conveying is 1,200 fr. a day, if a tug of the first class be employed, and 800 fr. a day for a tug of the second class. In the event of stoppage, the tug renders assistance in getting the vessel under way, as often as may be necessary. If the vessel is towed by the tender any distance exceeding that from one station to another, the charge for towage may be demanded in lieu of the charge for doing duty as a tender. Shipowners are authorized to have their vessel towed or convoyed by their own tugs, or tugs on hire, all responsibility connected with such acts devolving upon themselves. Such tugs must be approved of by the Canal Company. Ships towed or convoyed by approved tugs pay 50 c. per ton as towage dues. Such approved tugs, whenever they tow or convoy vessels belonging to their own proper owners, are free of any tax

Egypt—Suez Canal (*continued*).

whatever. Whenever they go through the Canal for the purpose of meeting vessels of their owners which they are about to tow or convoy, or when returning to their usual berth after having towed or convoyed the said vessels, tugs are not liable to payment of the special navigation dues, but they must take a pilot on board. All carrying of goods or passengers is prohibited to them; the fact of having on board passengers or goods entails upon them the payment of all dues and charges to which ships in transit are subject. Whenever approved tugs are used for towing or convoying vessels not belonging to their own proper owners, the same dues and charges are levied on them, for every passage through the Canal, as on ships in transit. Over and above the special treatment specified in the present article, tugs belonging to private owners are subject to the strict observance of the present regulations concerning vessels under way, or berthed.

MOROCCO.

Morocco, the most westerly of the Barbary States, extends from Cape Bojador on the Atlantic to the Algerian frontier. It has an estimated area of 219,000 sq. miles and a population of about 5,000,000, comprising Berbers, Tuaregs, Arabs, Jews, and Negroes.

Commerce.—The commerce of Morocco is of an annual value of a little over £4,500,000 sterling, the imports being valued at about 2 $\frac{3}{4}$ millions and the exports at 1 $\frac{3}{4}$ millions. Customs duties of 10 per cent. ad valorem are levied on all goods, the cash value wholesale at the port of entry being the accepted value. There is an export duty of 5 per cent. on vegetable products of the country and 10 per cent. on raw silk. Great Britain enjoys "most favoured nation" treatment in its commercial transactions with Morocco, this being secured by treaty, one of the articles of which states that no anchorage, tonnage, import, or other duty or charge shall be levied in the dominions of the Sultan of Morocco on British vessels or on goods imported or exported in British vessels beyond what is or may be levied on national vessels or on like goods imported or exported in national vessels.

Internal Communications.—These are extremely poor. There are no railways, whilst the roads are merely bridle paths. Great Britain, France, Germany, and Spain have Post Office agencies in the principal ports and commercial centres of Morocco, the post being conveyed by couriers daily. The British Post Office agencies were included in the British Imperial penny postage scheme on June 15, 1908.

Currency, Weights and Measures.—Spanish dollars and pesetas, as well as Moorish coins minted for the Government in France, are current. Wholesale merchants reckon by the dollar divided into 100 cents. The following are the coins in general circulation:—

SPANISH.

1 peseta of 100 cents.
25·225 pesetas at par = £1.

MOORISH.

Copper.
3 filss = 1 moozonat.
4 moozonat = 1 ukiya (oz.).
10 oz. = 1 metskal (ducat) *
12 $\frac{1}{2}$ metskal = 1 Hassani dollar (silver).
5 Hassani dols. at par = £1.

* The metskal is an imaginary unit.

The values fluctuate considerably, and for market purposes are sometimes no more than one-third of those adopted by the Government for Customs purposes.

The metric system of weights and measures is coming more and more into general use and is now very commonly employed by Europeans in Tangier. There are three weights in use generally:—

(1) The British avoirdupois is used for selling biscuits, confectionery, vermicelli, starch, and other European commodities of such kinds.

Morocco.

(2) The “ attari,” or grocer’s weight for sugar, tea, and rice. In this the kantar equals the British cwt., and the lb. the one-hundredth part of it. The table is as follows:—

[illegible]

(3) The “ bakalli ” or oilman’s weight :—

16 oz.	.	.	.	.	.	.	.	.	=	1 lb. 11 oz. (avoir.).
25 lb.	.	.	.	.	.	.	.	.	=	42 lb. 3 oz. (avoir.).
100 lb.	.	.	.	.	.	.	.	.	=	168 lb. 12 oz. (avoir.).

This latter is called the "kantar bakalli." "Bakalli" measure is used for meat, vegetables, fruit, semolina, salt butter, black soap, etc.

Measures of Capacity.—The grain measures vary in different places to such a degree as to make a brief table of them not feasible.

Cloth Measure.—In Tangier the British yard is largely used. The native measure is the kala or cubit= $21\frac{3}{4}$ in., which is also used for selling cloth of European make. The kala is divided into 16 parts called nuss-tmin. Native-made cloths are sold by the dra = 18 in.

The *kala* is roughly the length of a man's arm from elbow to finger tip plus the length of the middle finger. The *dra* is supposed to be the length of a man's arm from the elbow to the tip of the middle finger.

ANCHORAGE DUES.

	Ptas.	c.
Vessels of 1 to 50 tons	6	00
„ 51 „ 150 „	12	00
„ 151 „ 500 „	22	00
„ 501 and upwards	35	00

The above are payable in Moorish currency.

SANITARY FEES.

Vessels of	1 to	20 tons						Ptas.	c.
"	21 "	40 "	.	.	.	.	.	0	60
"	41 "	60 "	.	.	.	.	.	1	25
"	61 "	80 "	.	.	.	.	.	2	50
"	81 "	100 "	.	.	.	.	.	5	75
"	101 "	120 "	.	.	.	.	.	7	00
"	121 "	150 "	.	.	.	.	.	8	25
"	151 "	500 "	.	.	.	.	.	11	40
"	501 and upwards		.	.	.	.	.	14	50
			.	.	.	.	.	18	00

Steamers of 61 tons and upwards calling three or more times in a week pay one peseta less than above indicated.

The above fees are payable in Spanish currency.

Bills of Health good for West Coast ports and Tetuan are issued by the sanitary delegate at Tangier; fee, 5 pesetas, payable in Spanish currency. When vessels arrive after sunset the Pratique-master may be called by whistling more than three times, an extra fee of 25 pesetas, Spanish currency, being charged.

At Laraiche and Rabat there is some extra charge for sanitary fees, owing to the bar at the mouth of the rivers.

Bill of health from Morocco Board of Health, available for Moorish ports, 1 dollar. Bill of health from British Consulate, 10s.

Regulations for Discharging Ballast.—Masters of vessels are prohibited from discharging ballast within the ports or harbours of Morocco.

Morocco.

The master of a vessel anchoring in a port or harbour of Morocco must, on the day of arrival, declare in writing to the Consular-officer of his nation whether he desires to discharge ballast which he has on board; and further whether he has not thrown ballast overboard on arrival at a port before the foregoing declarations were made.

The master of a vessel desiring to discharge ballast must make it known to the Administrators of Customs, through the medium of the Consular-officer of his nation, and must carry out the orders of the Port-officers as to the site where such ballast may be discharged.

Masters of vessels making a false declaration to a Consular-officer regarding ballast will be fined as fixed in the following tariff. These fines will be doubled if an infraction is committed after the declaration has been made.

Vessels under 50 tons	30	dols.
„ over 50 and up to 100 tons	60	„
„ over 100 and up to 250 tons	100	„
„ over 250 tons	200	„

Masters of vessels committing an infraction of these regulations a second time will be fined double the above.

Fog Signal Apparatus at Cape Spartel.—A fog signal apparatus was established in May, 1907, in connection with Cape Spartel lighthouse. The type of signal is that of explosive rockets.

Lighthouses.—The Cape Spartel lighthouse still shows a fixed white light.

AGADIR.

Agadir, or Santa Cruz, in lat. 30°26' N., long. 9°30' W., is the most southern port in Morocco.

Accommodation.—It is an open roadstead, with 3 fathoms of water close to the shore. The bay is well sheltered, and has a good anchorage, but is open to winds from S.W. to W. Agadir may be considered one of the best roadsteads along the coast of Morocco, but is not at present (1909) open to Europeans either for residence or commerce.

CEUTA.

Ceuta, (belonging to Spain) in lat. 35°54' N., long. 5°21' W., is situated on a peninsula in Morocco, almost due south of Gibraltar.

Population.—15,000.

Exports.—Fish and antimony ores.

Accommodation.—The bay offers fair shelter. Vessels lie in about 24 ft. of water, and in the fine season may be considered safe. Vessels drawing 20 ft. can come alongside the quay. The outer anchorage is in 10 fathoms. Ships moor with the anchors to the N.E. and S.W. Ceuta is a free port for exportation and importation. Provisions are plentiful and cheap.

Pilotage.—Not compulsory. 25 ptas. in, and the same out.

Port Charges.—**Ballast:**—12 ptas. 50 c. per barge of 6 tons.

Clearance:—50 ptas. where there is no manifest. **Commission on**

Freight:—2 to 3 per cent. as arranged.

Morocco.

DAR-EL-BEIDA, OR CASA BLANCA.

Dar-el-Beida, or Casa Blanca, in lat. $33^{\circ}36' N.$, long. $7^{\circ}37' W.$, is a walled town, situated on the beach, with a low-lying background, within a point projecting $\frac{1}{2}$ mile N.N.E., and forming a cove well sheltered from winds S.E. to W.

Population.—About 20,000.

Imports.—Baled goods, hardware, sugar, tea, iron, etc.

Exports.—Grain, wool, goat-skins, etc.

Accommodation.—Good anchorage for sailing vessels is found in the roadstead about a mile and a half from the shore. in 13 to 15 fathoms of water. Steamers anchor within the cove about half a mile from shore, in 7 to 8 fathoms. The lighters for shipment of cargo being Moorish Government property the service is a monopoly; however, the work is now carried on in a much more efficient manner than formerly. Time expended in loading depends upon the number of vessels in port. There are now seven lighters, capable of conveying about 13 tons each. Harbour works are now in course of construction, and it is hoped that in about 4 years' time steamers will be able to enter and load or discharge alongside quays in 7 or 8 fathoms of water.

Provisions.—Beef, 4*d.* per lb.; mutton, 3*d.* per lb.; fowls, 10*s.* per dozen; eggs, 3*s.* 6*d.* per 100; water, 2*s.* per 25 gallons; hard bread, 15*s.* per cwt.

Pro Forma Charges on a steamer of about 450 tons register, or, say, carrying about 900 tons weight of grain:—

	Dols. c.	
Anchorage and harbour light	5 00	
Sanitary fees	4 70	
Captain of port	1 00	
Captain of lighters	1 30	
Boat hire	3 00	
		£ s. d.
Exchange, 7 dols = £1.	15 00	2 2 10
British Consular fees		1 2 6
*Labour, about £1 per day		3 0 0
		£6 5 4

* Provided the steamer is alone in the bay she can be loaded in about 3 days.

Ship-chandler's commission varies according to the goods purchased.

During the winter months, October to March, very frequently the sea is unworkable, and vessels lie off the port for days, being unable even to communicate.

LARAICHE.

Laraiche, or El Arish, in lat. $35^{\circ}13' N.$, long. $6^{\circ}7' W.$, is formed by the river El Kous.

Population.—About 5,000.

Imports.—Sugar, tea, candles, spices, raw silk, cotton goods, etc.

Exports.—Wool, hides, cereals, etc.

Accommodation.—Vessels drawing not more than 11 ft. can anchor in the river about 1,000 yards inside the bar, where there is very good anchorage for vessels up to 200 tons. Vessels of large tonnage generally

Morocco—Laraiche (*continued*).

finish loading outside the bar in the roadstead, where vessels of 3,000 tons have anchored, but are exposed to S.W., W., and N.W. winds. Crane to lift 4 tons on the quay. Loading and discharging is done by a lighter service, which is a monopoly of the Moorish Government.

Pilotage.—Compulsory in the river. **Steamers and Sailing Vessels :—** 1 ounce per reg. ton inwards, and the same outwards. Harbour pilotage not compulsory.

Port Charges.—For vessels anchoring outside the bar, 20 pesetas Hassani (local money). **Anchorage :—**In the river, 0.75 oz. per reg. ton.

Harbour Master's Fee :—Vessels up to 25 tons, 20 oz.; over 25 and up to 50 tons, 40 oz.; 51 to 100 tons, 60 oz.; 101 to 200 tons, 80 oz.; 201 to 300 tons, 100 oz. **Sanitary Dues :—**Paid in Spanish pesetas. Vessels up to 20 tons, 0.60 pesetas; 21 to 40 tons, 1.25 ptas; 41 to 60 tons, 2.50 ptas.; 61 to 80 tons, 5 ptas.; 81 to 100 tons, 5.75 ptas.; 101 to 120 tons, 6.25 ptas.; 121 to 150 tons, 9.40 ptas.; 151 to 500 tons, 12.50 ptas.; over 500 tons 15 ptas. There is also a charge of 5 ptas. for sanitary boat outside the bar, and 1.50 ptas. inside. **Labour :—**3 to 4 ptas. per day.

Ballast :—2.50 ptas. per ton. **Bill of Health :—**For another port in Morocco, 5 ptas. **Stevedores :—**4 to 5 ptas. per day. **Customs Officers :—**Inside the bar.

Vessels of	1 to	25 tons	Ounces.
"	26	" 50	20
"	51	" 100	40
"	101	" 200	60
"	201	" 300	80
"			100

No charge outside bar.

Pro Forma Charges on a steamer of 600 tons reg., loading outside the bar, and drawing 15 ft. loaded.

	Dols.	c.
Anchorage	4	00
Sanitary dues	3	50
Bill of health, to another port in Morocco	1	00
Sanitary boat with papers, etc.	2	00
Captain of the port	2	00
Stevedore and 10 labourers	6	80
	19	30 = £2 15s. 3d.

MAZAGAN.

Mazagan, in lat. 33°13' N., long. 8°30' W., is about 10 miles S.W. of Azamor.

Population.—5,000 to 6,000.

Exports.—Maize, wool, beans, peas, almonds, lentils, hides, skins, bones, barley, canary seed, coriander, linseed, fœnugreek, cummin seed, bullocks, eggs, and beeswax.

Accommodation.—There is a tolerably safe anchorage in 6 fathoms, protected from winds from S.E. to N.W. by W. Vessels are thus sheltered by a reef, which extends nearly a mile to the N.E. In rounding the reef the lead should be kept constantly going. Both anchors should be kept in readiness. In fine weather a boat comes off to point out the anchorage. In the winter time a considerable swell is experienced,

Morocco—Mazagan (*continued*).

but vessels with good ground tackle are in no danger. The bottom is of clay and sand. Sand ballast is allowed to be thrown overboard. Cargo is brought alongside in open lighters of over 20 tons each; 500 to 600 tons can be loaded in a day. Steamers of 4,000 quarters of grain have been dispatched in 2 days, but the general rule is in 3 to 4 weather days; the prompt dispatch depends upon the number of vessels in the bay. In November, 1907, a steamer was loaded with 7,000 quarters in 3 days.

Dunnage of brushwood, about 1s. 6d. for a camel's burden. Water, 2d. per small barrel; beef, 3d. per lb.; fowls, 1s. each; eggs, 3s. per 100; labour, 2s. per man per day.

MOGADOR.

Mogador, or Soueirah Harbour, in lat. 31°30' N., long. 9°20' W., is a seaport for the town of Morocco, the southern capital of the kingdom.

Population.—18,000.

Imports.—Woollen and cotton stuffs, tea, hardware, mirrors, linens, tin, iron, copper, steel, earthenware, glass, sugar, pepper, paper, provisions, beer, etc.

Exports.—Wool, gums, hides, goat-skins, sheep-skins, eggs, almonds, beeswax, olive oil, dates, maize, beans, peas, etc.

Accommodation.—Small vessels generally anchor close in, to the eastward of the middle of the island, about half a cable length off, in 10 to 13 ft. at low water on a loose and sandy bottom. This anchorage is sheltered by the island, which is about a mile and a half long, and a mile and a half from the shore. Vessels drawing over 19 ft. must anchor outside. The best and most sheltered anchorage in Mogador Bay is occupied by the wreck of a French steamer. The wreck is marked by a buoy with an iron flag that lies at the extremity of the wreck on the beach side. The wreck covers 50 metres N. to W., from the buoy, and is in several pieces. For large vessels wishing to anchor it is best to enter by the north passage keeping well up towards the Big Island, steering into the bay about S.E. till palm trees off a round fort to the extreme E. of the town are open; then steer up for two houses on the beach S. of the town; then get the first large (railed) tower N.W. of the town in a line with the right-hand bastion of the Waterport, and the tower on the top of the Big Island in a line with a low fort below; then anchor in 5 fathoms. Rise and fall of the tide is about 12 ft. High water full and change of the moon about 1.30.

Vessels bound to Mogador from the south, during the three winter months, often have S.W. winds. Vessels not drawing more than 12 ft. can enter through the South Channel by bringing the town open inside Mogador Island, and, when bearing N.E. magnetic, steer straight for it, coming-to off a small sandy beach on the island, and moor N.W. and S.E. With good ground tackle no danger need be apprehended. N.E. winds blow during nine months of the year. A stranger should steer so as to pass the island about 50 fathoms off, and come-to anywhere inside until a good berth can be chosen. The best place is inside the reef lying off the landing-place, where there is a good anchorage in 4 fathoms, and handy for cargo coming off. It is advisable to moor well at first, as the bottom is sandy, and there is a risk of the anchors starting. The anchorage inside the reef (not the island) is the one generally used by vessels.

Morocco—Mogador (*continued*).

on account of the facilities for landing and shipping cargo, and is quite safe during the summer months.

The entrance by the South Channel is not recommended to strangers, as there are many reefs and shoals in it.

The most dangerous months in the year are from October to March, when south-westerly winds prevail, and occasionally the sea in the bay is so heavy as to drive vessels on shore.

Pilotage.—Ships coming regularly to the port, and knowing the anchorage, pay no pilotage; strangers pay as follows:—Sailing ships, any tonnage, in and out, 35s., or half that sum for entrance only; steamers, according to arrangement with the pilot here, about £1 each way.

Port Charges.—

PRATIQUE CHARGES.

	Ptas.	c.
Pratique boat, to ordinary anchorage	3	75
„ „ to upper or island anchorage	7	00

PORT DUES FOR VESSELS.

	Ptas.	c.
1 to 20 tons	0	60
21 „ 40 „	1	25
41 „ 60 „	2	50
61 „ 80 „	3	75
81 „ 100 „	5	00
101 „ 120 „	6	25
121 „ 150 „	9	40
151 „ 500 „	12	50
501 and above	16	00

Bill of health to Morocco ports, 5 ptas.

Bill of health, British, 10s.

Endorsement of articles, 2s. 6d.

Bill of health, Spanish, if vessel going to a Spanish port, £1 1s.

Visé of sanitary delegate, 2s. 6d.

Anchorage dues, 4 dols. (Moorish). Fee to captain of the port, 2 ptas.

Labourage, 2s. per day. Stevedore, 4s.

Fresh water is plentiful, and if obtained by the ship's own boats and casks no charge is made for it. If supplied, 2s. per 100 gallons. Vegetables plentiful and cheap at times, but scarce and dear in the autumn.

Pro Forma Charges on a British steamer of 941 tons reg., bringing and taking partial cargo of mixed merchandise—four days in port :—

	£	s.	d.
Pilotage, by arrangement	1	0	0
Pratique and sanitary fees	0	16	6
Port dues and anchorage	0	16	6
British Consulate fees	0	12	6
„ „ marine protest	0	7	6
Ship-chandler's fee.	0	10	0
Boat	1	0	0
Boat sailors, 10s. 6d. per day	2	2	0
Labourers, 90	9	8	0
Water-port gratuities	4	16	0
Tally clerk	0	16	0
Government tally clerk	0	12	0
Guards on board	1	12	0
	£24	9	0

RABAT.

Rabat, in lat. 34°5' N., long. 6°49' W., is about 135 miles S.S.W. of the entrance of the Strait of Gibraltar.

Morocco—Rabat (continued).

Population.—With Sallee, 36,000.

Imports.—Cotton goods, iron, tea, coffee, sugar, silk and cotton handkerchiefs, knives, cloth, crockery, candles, cotton, spices, etc.

Exports.—Wool, wax, maize, beans, barley, hides, bones, blankets, goat and sheep-skins, carpets, and slippers.

Accommodation.—From November to April the entrance to the harbour is often dangerous, owing to the heavy surf which prevails in winter. The depth of water on the bar of the river Bouregreg varies from $6\frac{1}{2}$ ft. at neaps to $9\frac{1}{2}$ ft. at springs. The anchorage inside the river is perfectly safe except when the river is flooded, due to freshets. Sallee stands on the opposite side of the river. A pilot on board the surf-boat, which inside the bar awaits the approach of vessels, indicates the channel by means of a flag, the movements of which must be closely followed by the vessels. If held to the right, the vessel's head must be brought to bear that way; if to the left, the same movement must be made by the ship; if perpendicular, it implies "steady." Lighters go out directly a steamer is sighted to bring ashore the cargo, providing the agent or consignee has advised the captain of the port, and the bar is workable. As there is no time to order provisions, stewards should take the precaution to supply their wants beforehand. There are six Government lighters at this port, which carry roughly, in fair weather, up to 15 tons. Work is greatly facilitated, and time saved, by steamers when approaching the anchorage flying a signal (International code) indicating the number of lighters required for discharging.

Pilotage.—Compulsory, 2*d.* per ton, in or out.

Port Charges.—Anchorage:—Vessels up to 50 tons reg., 5 ptas. (about 2*s.* 6*d.*); 51 to 100, 10 ptas. (about 5*s.*); 101 to 150, 15 ptas. (about 7*s.* 6*d.*); 151 and over, 20 ptas. (about 10*s.*). **Health Boat,** etc.:— 13*s.*

Provisions:—Price moderate; beef and mutton, 2 $\frac{1}{2}$ *d.* per lb.

Pro Forma Charges on a steamer 1,000 tons reg. :—

	£	s.	d.
Pilotage	16	13	4
Anchorage, 4 dols., or, say, about	0	10	0
Bill of health and sanitary fees, about	0	17	6
Native labourers working cargo on board, 6 <i>d.</i> per head, each lighter load, say	5	0	0
	£23	0	10

SAFFI.

Saffi, or Asfee, is in lat. $32^{\circ}15' N.$, long. $9^{\circ}14' W.$, and is the port nearest the city of Morocco.

Population.—About 11,000.

Imports.—Cotton goods, sugar, tea, iron, etc.

Exports.—Beans, barley, canary seed, maize, wool, oil, gum, etc.

Accommodation.—Vessels usually anchor in 15 fathoms from $\frac{1}{2}$ to 2 miles from shore, but, owing to the heavy surf, it is generally impossible to land in ordinary ship's boats, and communication with the shore is occasionally impossible for a week or more. The roadstead is safe in summer, but in winter vessels are often obliged to proceed to sea when the winds blow from the S. or S.W. Vessels riding should be provided with strong cables. In consequence of the defective state of the lighter service at

Morocco—Saffi (*continued*).

Saffi, the permanent Customs Committee has issued orders to the port authorities at that town to effect at once the necessary repairs to the existing lighters and to begin building new lighters.

Port Charges.—**ANCHORAGE DUES.**

		Reals vellon.		£	s.	d.
Vessels of	50 tons	20		0	4	0
„	51 to 100 tons	40		0	8	0
„	101 „ 150 „	60		0	12	0
„	151 and above	80		0	16	0
Steamers	. . . . .	80		0	16	0

Bill of Health :—10s.**SANITARY FEES.**

		Reals vellon.	
Vessels of	41 to 60 tons	10	
„	61 „ 80 „	15	
„	81 „ 100 „	20	
„	101 „ 150 „	38	
„	151 and above	50	
All steamers	501 tons and upwards	61	

Vessels coaling from one port to another on the coast must be provided with a bill of health, fee 5 ptas. **Stevedores :—**4s. per day. **Labour :—**2s. per day without food. **Pratique Boat :—**20 reals vellon in summer, 40 reals vellon in winter.

TANGIER.

Tangier is in lat. 35°45' N., long. 5°50' W.

Population.—About 35,000.

Imports.—Alum, brass and copper, candles, cloth, cochineal, coffee, copperas, cotton goods, deals, china, earthenware, glass, hardware, indigo, iron, lead, paper, rice, silk, spices, steel, sugar, tea, tin, etc.

Exports.—Almonds, beans, carpets, canary and cummin seeds, dates, dyes, eggs, fowls, goat-skins, gums, hides, leather, leeches, maize, olive-oil, oranges, ostrich feathers, oxen, peas, sashes, slippers, trays, wax, and wool.

Accommodation.—Tangier Bay is exposed to almost every wind, but the anchorage, about a mile off the town, has sufficient water for the largest vessels. There are no docks, quays, or harbour, but only a small wooden pier for the use of passengers with 10 ft. of water at spring tides.

Port Charges.—For **Anchorage Dues** and **Sanitary Fees**, see **Morocco**.

Manifest :—At Custom House, 4 dols. Cargo is brought alongside at the merchant's expense. **Provisions :—**Fresh water, 3s. per puncheon : beef, 8d. per lb. ; eggs, 5s. 6d. per 100.

Lighterage :—Manchester goods in bales, flour, sugar, cement, gypsum, iron, tiles, bricks, building materials, and rough goods generally : 4 ptas. 50 c. Hassani (say 2s. 4d.) per ton (avoir.). Goods in cases : No definite tariff. The rates actually levied vary from 15 c. for a small case (say a case of a dozen bottles of wine) to 5 ptas. for a very large, heavy case.

Cattle Shipping :—Lighterage 1 pta. per head to Gibraltar or other small steamers lying near shore, and 1 pta. 25 c. per head to steamers anchored further out. Lighterage is the only port due paid for cattle.

Morocco.

TETUAN.

Tetuan, in lat. $35^{\circ}35'$ N., long. $5^{\circ}22'$ W., is about 22 miles S. of Ceuta ; it is the only Moorish port in the Mediterranean.

Population.—About 30,000.

Imports.—Cotton goods, cotton thread, cloth, candles, crockery, flour, hardware, petroleum, sugar, tea, silk, etc.

Exports.—Eggs, fruit, oranges, slippers, wax, linseed, etc.

Accommodation.—The harbour is only suitable for small vessels. Any number of vessels could lie at anchor in the bay, which is well sheltered from N. by N.W. round to S.S.W. Shipmasters should be careful, however, not to be overtaken by winds blowing on shore. The best anchorage is in 14 fathoms. As it is an open roadstead, and there is no shelter from the very prevalent east wind, vessels have often to go to Ceuta for shelter.

The town of Tetuan is 7 miles from the sea, but the port is at the mouth of the river Martin, where, in summer, there is only 2 to 5 ft. of water ; in winter there is not more than 10 ft. Loading and discharging is done by means of four lighters belonging to the Government.

Water can be obtained from a stream some distance off.

Port Charges.—Anchorage Fees :—From 7 ptas. to 22 ptas.
Sanitary Fees :—From 60 c. to 12 ptas. 50 c., according to tonnage.

The Custom House requires a manifest for both inward and outward cargo ; the latter has to be endorsed at the Consulate in duplicate.

TRIPOLI.

The Turkish vilayet of Tripoli includes all the north coast of Africa between Tunis and Egypt, and embraces the administrative divisions of Tripoli, Fezzan, and the sanjak of Barka, having a total area of 398,900 square miles, with a population of 1,000,000. The trade of the province amounts to a little over £800,000 per annum, and is almost equally divided between the imports and exports. The products of the country are chiefly wheat and barley, of which, however, little is exported, these latter consisting almost entirely of esparto grass, sponges, dates, olives, and citrous fruits. Tripoli, the chief city and port, is the Mediterranean terminus of the great caravan routes across the Sahara to Lake Chad and the river Niger. It is connected by telegraph cable with Malta, and by land-lines with Murzuk, the capital of Fezzan, and Gabes, in Tunis. Benghazi, the capital of Barka, is also a port of some importance, the chief trade being in cereals and wool.

Currency, Weights and Measures.—The monetary unit is the piastre of 40 paras= $2\frac{1}{2}d.$; 20 piastres=1 muhbab=4s. 2d. The weights and measures in use are the same as those employed in Turkey.

BENGHAZI.

Benghazi, in lat. $32^{\circ}7' N.$, long. $20^{\circ}4' E.$, is situated on the east coast of the Gulf of Sidra.

Population.—15,000.

Imports.—Cotton and woollen manufactures, sugar, iron, boards, spirits, wines, tobacco, oil, tea, coffee, etc.

Exports.—Barley, wheat, cattle, wool, butter, skins, madder, ostrich feathers, and ivory.

Accommodation.—No vessel drawing over 7 ft. of water can enter this port. Westerly gales rage with great violence on this coast during the winter. Vessels caught in them in the Gulf of Sidra cannot seek shelter at Benghazi, as the rocks and shallows in and at the mouth of the harbour and the strong out-running currents render it exceedingly dangerous to attempt to enter with a heavy sea, and vessels have to go to Bomba, 210 miles to the eastward.

Pilotage.—16s. to 20s. according to size of vessel.

Port Charges.—Sanitary and Lighthouse Dues:—Same as Tripoli.

Stevedore:—Loading, 4d. to 6d. per ton. Discharging, 1d. to 1s. per package. Charges of daily labourers and lighterage equal 1s. per ton. **Brokerage:**— $2\frac{1}{2}$ per cent.; on salt, $\frac{1}{2}$ per cent. **Shipbroker:**—Clearance, £6 6s.

Water:—2 barrels containing 60 okes, from $1\frac{1}{2}d.$ to $2\frac{1}{2}d.$ according to quality. Beef, 7 to 8 piastres the oke.

Pro Forma Charges on a steamer of 1,080 reg. tons, with a cargo of 2,000 tons in:—

Tripoli—Benghazi (continued).

Lighthouse dues, 423 piastres (110 piastres per £ sterling)	£	s.	d.
Sanitary dues, 416 piastres	3	16	11
Pilotage, in and out	3	15	7
Towage	1	0	0
Boat hire, 8 days at 6s. per day	1	0	0
Stevedore, 2,000 tons at 6d. per ton	2	8	0
Postages	50	0	0
Consular fees, 2s. 6d.; British bill of health, 10s.	0	2	0
Entrance and clearance as per charter-party	0	12	6
Provision account	5	5	0
	8	0	0
	76	0	0
3 per cent. insurance on disbursement	2	5	7
	£78	5	7

DERNA.

Derna is in lat. 32°45' N., long. 22°41' E.

Population.—10,000.

Accommodation.—There is good anchorage about $\frac{1}{4}$ of a mile from the shore. In spring and summer the winds blow from the N.W. and during autumn and winter from the S.E. In very bad weather vessels proceed to Bomba, 50 miles to the S.E., for shelter.

Pilotage.—Optional. If taken 1 piastre per reg. ton.

Port Charges.—**Light Dues:**—Same as Benghazi. **Stevedore:**—Loading and discharging, 4d. per bale. **Sanitary Dues:**—20 paras per ton up to 500 net reg. tons; 12 paras per ton from 501 to 1,000 tons; 8 paras per ton above 1,000 tons.

Provisions.—Beef, 5 piastres; coal, 1 piastre; and wood, $\frac{1}{2}$ piastre per oke (=2 $\frac{3}{4}$ lb.). **Boat Hire:**—8s. per day; Clearance and Agency, £5. Messenger, 1s. 8d.

TRIPOLI.

Tripoli is in lat. 32°52' N., long. 13°11' E.

Population.—About 30,000.

Imports.—Cotton goods, ironware, tea, coffee, sugar, flour, pottery, timber, cutlery and chemicals.

Exports.—Esparto, ostrich feathers, ivory, barley, etc.

Accommodation.—The entrance to this port is somewhat dangerous. On a fort to the west of the town stands a lighthouse with a revolving light. The port is difficult to make, the palm groves are the only objects that can be seen by a vessel approaching the coast. Ships nearing the coast at night are obliged to lay-to until daylight. There is no other harbour a ship can run to for shelter, and in bad weather the entrance of the port is especially difficult and dangerous. At the entrance of the bay the depth of water is from 3 to 9 fathoms; inside the harbour, 4 to 5 fathoms. Vessels of 18 ft. draught can enter. In heavy gales from the N. to N.E. vessels are often in great danger, and sailing vessels are sometimes driven on shore.

There are two small cranes on the Custom House quay and another at the Government landing-place.

Pilotage.—Strangers should not attempt to enter without a pilot; 16s. in, and the same out.

Tripoli—Tripoli (continued).

Port Charges.—Light Dues :—5 to 800 tons, 18 paras per ton ; 801 and upwards, 9 paras per ton. A vessel of 2,000 tons would pay on the first 800 tons 18 paras per ton, and on the remaining 1,200 tons, 9 paras per ton (40 paras = 1 piastre). **Quarantine Dues :—**Vessels performing quarantine, if loading or discharging, require two guards on board and two in boats at vessel's side, for which a charge of 25 piastres (4s. 3d.) per guard each day is made. Vessels of 1 to 100 tons, 10 piastres (1s. 8½d.) per day ; 101 to 200 tons, 20 piastres (3s. 5d.) per day ; 201 to 400 tons, 30 piastres (5s. 1d.) per day ; 401 to 1,000 tons, 40 piastres (6s. 10d.) per day. If a vessel arrives without a bill of health from port of departure she is liable to a fine as follows : Sailing ships 1 to 50 tons, £T2 (£1 16s. 9d.) ; 51 to 200 tons, £T5 (£4 11s. 10½d.) ; 201 and upwards, £T10 (£9 3s. 8d.) ; steamers of any tonnage, £T12 (£11 0s. 5d.). **Water :—**Generally procured by the crew from a spring on the seashore, near the harbour. **Provisions :—**Beef, 8d. per lb. Bread, 3d. per lb. Biscuits, £1 per cwt. Fowls, 1s. 6d. each. **Discharging :—**For a lighter of 20 tons burden, 5s. each trip. **Labour :—**1s. to 2s. per man per day. **Sand Ballast :—**Put on board, 18s. to 20s. for 20 tons ; if taken and put on board by the crew, 13s. to 15s., and 1s. per day to the port guardian. Ballast must be thrown overboard outside the port, under the surveillance of the port guardian, to whom is paid a fee of 1s. per day.

Merchants charge for buying and selling, 2½ per cent. ; for wheat and barley, 3 per cent. ; brokerage, 1 per cent. ; storage, 1 per cent. ; commission on chartering a vessel, 2 to 3 per cent. ; collecting freight, 4 to 5 per cent. ; attendance in unloading a vessel and cashing freight, 2 per cent.

Pro Forma Charges on a vessel of 1,000 reg. tons :—

	£	s.	d.
Light dues, 1st 800 tons, $\frac{1}{10}$ piastre ; 200 tons, $\frac{2}{10}$ piastre	3	7	10
Sanitary dues, 1st 500 tons, $\frac{1}{2}$ piastre, 250 piastres ; 2nd 500 tons, $\frac{3}{10}$ piastre, 150 piastres	3	7	6
Pilotage into or out of Tripoli	0	16	0
Consulate and cemetery fees	0	7	6
Stevadore's account, 1,000 tons at 8d. per ton	33	6	8
" boat	0	10	0
Hooks for hoisting bales (if required)	1	0	0
Boats for towing lighters (if required)	7	0	0
Boat hire for ship, say 4 days at 5s. per day	1	0	0
Entering and clearing	6	0	0
	£56	15	6

N.B.—If loading at Tripoli and other ports on this coast the extra charge for each other port would be :—

	£	s.	d.
Light dues	3	7	10
Consulate fee	0	2	6
Boat hire, per day	0	5	0
Entering and clearing	6	0	0
	£9	15	4

TUNIS.

The Regency of Tunis is now a French Protectorate, and is practically administered by the French Foreign Office through the Resident stationed at the capital. It has an area of 45,780 square miles, and a population according to the most recent census of 1,500,000.

Commerce.—The total movement of trade of the Regency for the year 1907 amounted to £8,248,850, made up of imports £4,114,408, and exports £4,134,442. The principal articles of import consist of hardware, machinery, wrought iron, steel, coal, etc., whilst the exports are chiefly agricultural products, phosphates, and mineral ore.

Internal Communications.—The roads throughout the Regency are good, and at the present time there are open for public traffic something like 800 miles of railroad. These lines are all held by French companies, with the exception of a light mineral line connecting the port of Sfax with Gafsa. This line was constructed in order to provide a means of transport for the important deposit of phosphates which have been discovered in the neighbourhood of Gafsa. There is an excellent post, telegraph and telephone service.

Currency, Weights and Measures.—For the purposes of trade these are similar to those used in France. The exchange is nominally 25 fr. per £. It is often at that exact figure, but has never in recent years fallen below. It is generally, however, something in favour of the £ sterling, exchange varying from 25 fr. 5 c. to 25 fr. 10 c.=£1, the fluctuations following the movements of the Paris Bourse.

BIZERTE.

Bizerta, in lat. 37°15' N., long. 9°52' E., is on the northern point of Africa, 60 miles from Tunis.

Population.—31,000.

Exports.—Wheat, cereals, olive-oil, wines, cattle, hides, and fish.

Accommodation.—The new harbour of Bizerta comprises : A breakwater, 2,000 ft. in length ; two jetties, 3,300 ft in length, extending to a depth of 46 ft. of water ; an outer harbour, formed by these two jetties, with a superficial area of about 225 acres ; a canal connecting the sea with the lake, having a depth of 30 ft., a breadth of 820 ft. at the water-line, and 656 ft. at the bottom ; quay walls in masonry, with 26 ft. of water alongside ; sheds and warehouses ; railway lines on the quays in connection with the Tunisian and Algerian railways ; a maritime railway station for passengers and goods ; rolling steam cranes, a floating sheer-leg crane capable of lifting 25 tons ; and an excellent anchorage for numerous vessels in Sebra Bay, at the entrance to the lake, in 4 $\frac{3}{4}$ fathoms.

The following are the dry docks :—

No. 1	is 656 feet long,	90 $\frac{1}{2}$ feet wide at the entrance,	33 $\frac{1}{2}$ feet deep on the sill.
No. 3	„ 295 „ „	46 $\frac{1}{2}$ „ „	17 „ „ „
No. 4	„ 656 „ „	90 $\frac{1}{2}$ „ „	33 $\frac{1}{2}$ „ „ „

Tunis—Bizerta (*continued*).

The depth on the sill given is at high water ordinary springs.

The Port de Bizerta Co.'s workshops are supplied with every machinery necessary for repairing steam engines.

Vessels can promptly procure Cardiff coal or patent fuel. Fresh water is supplied in the roadstead by tank-boats, or on the quays through pipes.

Pilotage.—Optional, whether coming in or going out of the outer harbour. If requested by the captain, the dues are, daytime, 10 fr.; night, 15 fr. In the canal and inner harbour pilotage is compulsory. Night pilotage (in addition to Tax No. 1) for vessels up to 300 reg. tons, 10 fr.; from 301 to 800, 15 fr.; from 801 upwards, 20 fr.

Port Charges.—Lighthouse and Sanitary Dues:—18 c. per reg. ton (maximum, 90 fr.). For vessels coaling only 45 fr. (Tax No. 1).

Pilotage, Shelter, and Canal Dues (per reg. ton and per day, with a minimum of 10 days):—Vessels performing commercial operations, 3 c.; vessels performing commercial operations (regular monthly or weekly service), 2 c.; vessels coaling only (for a stay of 48 hours, per reg. ton and per day), 2 c.

Loading and Discharging Dues:—On goods, per 1,000 kilos., 1 fr. **Tugboats:**—According to tariffs. **Fresh Water:**—Alongside quay, 1 fr. per 1,000 litres; from tank-boats, 5 fr. 10 c. per 1,000 litres up to 10,000 litres; 3 fr. 10 c. per 1,000 litres after.

Pro Forma Charges on a steamer of 1,002 net reg. tons from Cardiff, with a cargo of 2,000 tons of coal:—

	Fr.	c.
State dues, examination and lighthouse dues	90	00
Pilotage, shelter, and canal dues (3 c. per reg. ton per day, 10 days)	300	60
Discharging, 2,000 tons of coal at 1 fr. per ton	2,000	00
Pilotage in the outer harbour (daytime)	10	00
Pilotage in the inner harbour (night)	20	00
Water, delivered alongside the quay, 15 tons at 1 fr.	15	00
	2,435	60 = £96 12s. 9d.

GABES.

Gabes, in lat. 33°52' N., long. 10°4' E., is situated in the Gulf of Gabes.

Population.—About 15,000.

Imports.—Sugar, flour, colonial products, cotton goods, oil, and building materials.

Exports.—Esparto grass, barley, dates, and sheep.

Accommodation.—Steamers can anchor within a mile of the shore. The roadstead is quite open from N. to S.E. A nasty sea sometimes comes in. Loading is done by lighters when the weather permits.

Pilotage.—Not compulsory. **Towage:**—1s. per ton.

Port Charges.—Boat Hire:—25 fr. per boat. **Consular Fees:**—2s. 6d. **Bill of Health:**—10s. **Light Dues:**—90 fr. 20 c. only paid at one Tunisian port. **Ballast:**—4 fr. per ton. **Labour:**—2 fr. 50 c. per man per day. **Brokerage:**—£3 3s.

MEHEDIAH.

Mehediah, or Mahdia, is in lat. 35°30' N., long. 11°5' E.

Population.—12,000.

Tunis—Mehediah (*continued*).

Imports.—Coffee, sugar, silk and cotton goods, wood and boards, etc.

Exports.—Sea salt, olive-oil, and cereals.

Accommodation.—The anchorage at Mehediah is good when the wind blows from the N. towards the W. and S., but it is exposed to winds from the N.E. and S.E. The erection of lighthouses along the coast easily permits of anchorage in a depth of 10 to 15 metres. The Custom House quay is 300 ft. long, with a depth of about 5 ft. alongside. There is a breakwater to shelter boats up to 5½ ft. draught. This port is the terminus of the Boue-Guelma railway via Sousse and Tunis.

Pilotage.—Not compulsory. Steamers, 50 fr.

Port Charges.—**Sanitary Dues** :—18 c. per ton measurement, with a maximum of 90 fr. (Paid by foreign vessels which have not called at a port in Tunis.) **Boat Hire** :—Small four-oared boats, 5 fr. per journey.

Consular Fees :—12 fr. **Loading** :—Sea salt, 50 c. per ton. General cargo, 1s. 6d. per man per day. It is customary to find the labourers in bread, which costs about 4d. per man per day. **Stevedore** :—The stevedore is paid by the merchant, but usually receives a gratuity of £1. **Brokerage** (attendance and interpreter) :—Vessels up to 1,000 tons, 100 fr. From 1,001 to 2,000 tons, 150 fr. From 2,001 to 4,000 tons, 200 fr. Vessels of 4,001 tons and upwards, 250 fr. **Provisions** :—Vessels can easily obtain provisions such as meat, bread, vegetables, eggs, poultry, fish, fruit in season, etc., and the town is supplied with spring water.

MONASTIR.

Monastir is in lat. 35°45' N., long. 10°50' E.

Population.—About 8,000.

Imports.—Colonial goods, Manchester goods, building materials, and slack coal.

Exports.—Olive-oil, wool, skins, soap, and salt.

Accommodation.—This is one of the best roadsteads in Tunis. The anchorage is very good, being on a sandy bottom with seaweed. The only winds interfering with the vessel's operations are those from the N.E. The mooring place is situated 700 metres (760 yards) E. of the Customs office. The Custom House quay is 300 ft. long with 5 ft. alongside. Vessels are moored in 9 and 11 metres (29½ and 36 ft.).

Port Charges.—**Light Dues** :—9 c. per reg. ton. **Sanitary Dues** :—9 c. per reg. ton.

SFAX.

Sfax is in lat. 34°44' N., long. 10°46' E.

Population.—65,000 (including outskirts).

Imports.—Cotton goods, building materials, hardware, groceries, boat building materials, wines, drugs, coal, railway materials, etc.

Exports.—Phosphates, esparto grass, sponges, dates, oil, almonds, woollen goods, esparto cords, wool, cereals, etc.

Accommodation.—The roadstead is undoubtedly the best on the Tunis coast. Steamers generally anchor from 2½ to 3 miles from the

Tunis—Sfax (*continued*).

shore, S.E. of the centre of the town, at the entrance to the channel, in 26 to 33 ft., marked by a green buoy. Good holding ground; there is never any sea. The length of the entrance channel, to the dock, is $2\frac{1}{4}$ miles; width of entrance channel, top 118 ft., bottom, 72 ft. Length of quays: W. quay, 1,207 ft.; N. quay, 738 ft. The depth in the entrance channel, dock and quayside, at high water is 27 ft., and at low water $21\frac{1}{4}$ ft. The dock has an area of 25 acres. There are two steam cranes of 1,500 kilos., and a floating crane of 20 tons. There is a railway 285 kilometres long which connects Sfax with the interior of the country. The port is well supplied with good lighters and a steam-tug. Important works are now being undertaken, and the channel will be widened and deepened as well as the dock, so that vessels of large tonnage will be able to call at this port.

Pilotage.—See the port of **Tunis**.

Port Charges.—Light and Sanitary Dues :—18 c. per reg. ton, with a maximum charge of 500 tons, payable at only one port in Tunis; if the vessel calls at another port it is free of this due. Canal dues, 30 c. per ton; if the vessel has been at another Tunisian port, half rate, 15 c. Other charges, see the port of **Tunis**.

Pro Forma Charges on a steamer of 782 reg. tons, arriving in ballast from Girgenti, and leaving loaded with 2,000 tons phosphate for United Kingdom :—

	Fr. c.	
Light and sanitary dues at 18 c. on 500 tons, maximum charge	90	20
Pilotage to shelter, and 10 days, minimum at 3 c. per reg. ton		
and per day	234	60
Loading dues, 2,000 tons at 50 c.	1,000	00
Mooring and unmooring, 2 c. per reg. ton	15	64
Consul	15	60
Agency	200	00

1,556 04 = £61 14s. 9d.

SUSA.

Susa, or Soussah, is in lat. $35^{\circ}49'$ N., long. $10^{\circ}38'$ E.

Population.—About 24,000.

Imports.—Cotton goods, iron, and coal.

Exports.—Olive-oil, esparto fibre, wheat and barley, soap, wool, hides, lead, and zinc.

Accommodation.—The usual anchorage outside is in 5 to 6 fathoms, and the depth available for vessels entering the port is about 20 ft. A breakwater runs out on the N. side of the harbour; depth inside, 21 ft. The Custom House quay is 1,800 ft. long, with a depth alongside of 20 ft., and has one crane to lift up to 10 tons. There are no tides.

Pilotage.—Dues same as the port of Tunis. Optional

Port Charges.—Light and Sanitary Dues :—Paid at the first port of call on the Tunis coast. 18 c. per ton up to 500 tons; maximum charge, 90 fr. 15 c. **Consul's Fees** :—British bill of health, 10s.; for viséing the articles, 2s. 6d. **Provisions** :—Provisions of all kinds are abundant; beef, 8d. per lb. Water free.

Tunis.

TUNIS.

Tunis is in lat. $36^{\circ}47'$ N., long. $10^{\circ}11'$ E.

Population.—227,519.

Imports.—Woollen goods, linen and cotton goods, hardware, machinery, sugar, tea, coffee, spices, wines, liqueurs, silks, iron, and building materials.

Exports.—Barley, olive-oil, dates, wine, cattle, horses, fez-caps, wool, zinc and lead ores, and phosphates.

Accommodation.—A channel 98 ft. wide has been dredged from the sea to the city, with a depth of 21 ft. 4 in. The channel is 6 nautical miles long. It has a waiting and a passing station midway. Near the sea end of the channel, which is protected by two breakwaters, is the basin of La Goulette, about 18 acres in extent, with a depth of 8 ft. 4 in., and a quay 1,050 ft. long. In front of the city is a basin about 30 acres in extent, with the same depth of water as the channel. In this basin are three wooden piers for landing passengers, and 1,875 ft. of quayage, where steamers can load and discharge alongside. There are two steam cranes to lift $1\frac{1}{2}$ tons, and capable of discharging 40 to 50 tons an hour each; one steam crane to lift 3 tons. These are all situated on the quays. There is a floating steam crane to lift 20 tons. At La Goulette there is a small dry dock, 193 ft. long, 31 ft. wide, and $9\frac{1}{2}$ ft. on the sill.

Pilotage.—Optional. For vessels outside the port, any tonnage, day-time, 10 fr.; night-time, 15 fr. Night pilotage in the port (in addition to the compulsory rate, No. 1) for all vessels—Up to 300 net reg. tons, 10 fr.; from 301 to 800 tons, 15 fr.; 801 and over, 20 fr. Vessels in quarantine, having taken a pilot on board, 10 fr. per day.

Port Charges.—Rate, No. 1. **Pilotage, Shelter, and Berth:**—Every vessel coming from the open sea, having crossed the entrance buoys of the channel or of the piers, 3 c. per day and per net reg. ton. This rate is reduced by one-half for all vessels coming from the Tunisian coast, and by one-third for vessels set apart for regular weekly or monthly service with ocean ports. **Mooring:**—Vessels mooring at the quays or at the landing stages are allowed time for loading and discharging as follows: 1 free day per 200 tons of goods, for steamers; 1 free day per 40 tons of goods, for sailers. After one day vessels are charged at the rate of 10 c. per net reg. ton per day.

Loading and Discharging Dues:—1 fr. per ton of goods loaded or discharged. This rate is reduced by one-half, when discharging, for vessels discharging goods for transshipment, and for vessels fully loaded coming from the Tunisian coast; when loading, for vessels fully loaded going to the Tunisian coast. Fractions of tons are reckoned as a whole ton. **Storage**

Dues:—Goods stored in covered sheds on the quays, over 3 free days, holidays not included, for each of the 6 days beyond the first 3 days, 15 c.; for each of the following 3 days, 30 c.; beyond this, 60 c. per day. For goods stored in uncovered quays the above rates are reduced by two-thirds.

Towage:—Between sunrise and sunset, hiring tugboat, crew and coal included (ropes supplied by the vessel tugged), per net reg. ton (minimum, 100 tons)—between the basins of Tunis and La Goulette, as well as between one of them and the anchorage in the roadstead, or a point situated at $\frac{1}{2}$ a mile in the open sea, 15 c.; for all uninterrupted manœuvres in the basins

Tunis—Tunis (*continued.*)

of Tunis and La Goulette (maximum, 15 fr.), 6 c. In all other cases towage is charged at the rate of 24 fr. per hour (minimum, 1 hour). Between sunset and sunrise these charges are raised by 50 per cent. Hire of mooring ropes, 2 c. per net reg. ton (minimum, 100 tons). **Mooring and Unmooring :**—2 c. per net reg. ton. **Water :**—1 fr. per ton. **Labour :**—Loading and discharging : Vessels lying alongside the quay, taking from the hold and placing under tackle, 50 c. per 1,000 kilos. ; taking under tackle and placing on covered or uncovered wharves, 60 c. per 1,000 kilos. Vessels not lying alongside, taking from the hold and placing under tackle, 50 c. per 1,000 kilos. ; taking under tackle and placing on the quay, 60 c. per 1,000 kilos. ; taking on the quay and placing on covered or uncovered wharves, 60 c. per 1,000 kilos. For covering with tarpaulins on the wharves, including watching 10 c. per ton per day. **Charges for the Use of Cranes :**—Use of a crane of 1,500 kilos. capacity, 4 fr. per hour ; after regular hours, daytime, 4 fr. 50 c. per hour ; night, 5 fr. 50 c. per hour. For a crane of 3,000 kilos. capacity 6 fr. per hour ; after regular hours, daytime, 6 fr. 50 c. per hour ; night, 7 fr. 50 c. For sheers or a crane of 20 tons capacity—lightering, 20 fr. per hour ; with a maximum capacity of 5 tons, 10 fr. per hour ; with a maximum capacity of 10 tons, 15 fr. per hour ; with a maximum capacity of 20 tons, 25 fr. per hour. After regular hours : With a maximum capacity of 5 tons, daytime, 11 fr. per hour, night, 12 fr. 50 c. per hour ; with a maximum capacity, of 10 tons, daytime, 16 fr. 50 c. per hour, night, 19 fr. per hour ; with a maximum capacity of 20 tons, daytime, 27 fr. 50 c. per hour ; night, 30 fr. per hour. Necessary ropes for working pontoon, 2 fr. 50 c. per hour ; slings 2 fr. 50 c. per hour per sling ; baskets for the steam cranes, 50 c. per hour, and per basket. Hand crane (including labour), 1 fr. 50 c. per hour ; vessel supplying labour, 90 c. per hour. For all these tariffs the minimum is 4 hours for steam engines and their accessories, and 1 hour for hand machines. Fractions of an hour will be reckoned as a full hour. **Weighing Charges :**—5 c. per ton or fraction of a ton. **Charges for the Repairing Dock of La Goulette :**—First day, including working of the gates and draining of the dock, 50 fr. ; for every following day or fraction of a day, 10 fr.

Light and Sanitary Dues :—18 c. per net reg. ton, with a maximum of 500 reg. tons. **Shipbroker's Dues :**—£5 5s. for entrance and the same again for clearance. **Ballast :**—Sand, 2 fr. 50 c. per ton. Provisions and water are abundant.

Pro Forma Charges on a steamer of 1,533 reg. tons with a cargo of 2,893 tons of general merchandise :—

	Fr.	c.
Sanitary dues	90	20
Shelter and canal dues, 3 c. per day per net reg. ton for 10 days	459	90
Port dues, 1 fr. per ton of cargo discharged	2,893	00
Agency	125	00
Towage, and shifting from one place to another	20	00
Boat hire, 4 days at 5 fr. per day	20	00
Customs charges and consular fees	25	00
Gratuities to pilots	10	00
Mooring and unmooring	25	00
Water, 50 tons at 3 fr. per ton	150	00

3,818 10 = £151 9s. 10d.

EAST AFRICA.

EAST AFRICA (BRITISH).

The British East Africa Protectorate has an area of about 177,100 square miles with a population of about 4,000,000. The annual trade is valued at a little more than one million pounds sterling; the imports (1907-8, £799,717) consisting principally of hardware, cereals, Manchester goods, wines, spirits, and tobacco, and the exports (£515,052) of raw cotton, hides, and skins, ivory, copra, grain, wax, and rubber. The interior is being opened up by the Mombasa-Victoria Railway, 584 miles long. There is a good postal and telegraph service.

KILINDINI.

(See **Mombasa and Kilindini**, below.)

LAMU.

Lamu is in lat. $2^{\circ}18'$ S., long. $40^{\circ}50'$ E.

Population.—About 5,000.

Imports.—Cotton goods, guns, powder, iron, and European goods generally.

Exports.—Ivory, rhinoceros' horns, gum, wax, skins, and maize.

Accommodation.—This is a secure port, with anchorage off the town for vessels of 20 ft. draught, and not more than 300 ft. in length. Off Shella there is good anchorage for vessels 450 ft. in length and 20 ft. draught. The channel over the bar is narrow, but straight, from 100 to 300 yards inside. Spring tides rise 11 ft.

Water is plentiful, but rather brackish. Bullocks, sheep, poultry, and vegetables are abundant; also, at times, rice and dates.

British India and German steamers call monthly.

MALINDI.

Malindi is in lat $3^{\circ}15'$ S., long $40^{\circ}10'$ E.

Accommodation.—There is good anchorage in 5 fathoms, sand and coral, with Custom House flagstaff S.W. by S. This is the centre of a large grain district.

Beef, fish, fowls, eggs, and vegetables can be obtained at reasonable prices.

MOMBASA AND KILINDINI.

The port of Mombasa is in lat. $4^{\circ}0'$ S., long. $39^{\circ}42'$ E.

Population.—30,000.

Imports.—Piece goods, grain, including rice, flour, etc., building materials, iron and steel ware, etc.

Exports.—Ivory, hides and skins, rubber, grain, chillies, copra, cotton, and mangrove poles.

East Africa (British)—Mombasa and Kilindini (*continued*).

Accommodation.—The port of Mombasa consists of two harbours, Mombasa and Kilindini. The former is situated on the E. side, and the latter on the W. side of the island. Both harbours are well sheltered by the natural formation of the coast-line and out-lying reefs, and are fairly easy of access, with good leading marks in both harbours. The depth of water in the channels, and both harbours, ranges from $5\frac{1}{2}$ fathoms to 18 fathoms, low water springs. The channel into Kilindini is 600 ft. wide and 1 mile long; that into Mombasa 450 ft. wide and 1 mile long. Cargo is discharged into lighters and then taken alongside the two stone piers at Mombasa, each of which has a steam crane capable of lifting 2 tons. The railway pier at Kilindini is being extended with a view to deep water berthing. There are three 3 ton and two 5 ton cranes on the Kilindini pier. Rise of tide 11 ft., springs. There are no docks. Vessels drawing 35 ft. can enter.

Pilotage.—Not compulsory. Steamers, 100 to 500 tons reg., 40 rupees; 3,000 tons, 80 rupees; sailing vessels, 100 to 300 tons, 70 rupees; 2,000 tons, 85 rupees.

Port Charges.—**Light Dues**:—£2 per vessel. **Boat Hire**:—4 rupees per day. To or from steamer, Mombasa, 2 annas; Kilindini, 3 annas. **Ballast**:—3 rupees per ton, f.o.b. **Labour**:—Coolies, $1\frac{1}{2}$ rupees per day. **Bill of Health**:— $7\frac{1}{2}$ rupees. **Endorsement of Ship's Articles**:—1 rupee, 14 annas. **Stevedore**:—Loading and discharging, 12 annas per ton. **Land-**

ing Charges (including lighterage):—3 rupees per ton weight or measurement. **Provisions**:—Plentiful and fairly cheap. Beef, 4 annas, mutton, 5 annas per lb. **Water**:—5 rupees per ton. Coal can be obtained; Welsh, 55s. per ton.

PORT DURNFORD.

Port Durnford, on the Birikau river, is in lat. $1^{\circ}13' S.$, long. $41^{\circ}55' E.$

Accommodation.—There is safe anchorage, off the village of Birikau, in 6 fathoms. There is 21 ft. of water on the bar at low water, but there is a patch of 18 ft. right in the centre of the channel. Springs rise 12 ft., and neaps 9 ft.

PORT REITZ.

Port Reitz, in lat. $4^{\circ}2' S.$, long. $39^{\circ}40' E.$, leads out of Port Kilindini, and is about $2\frac{1}{2}$ miles long, by $\frac{1}{2}$ a mile wide, with from 6 to 20 fathoms of water. The anchorage is in 4 to 8 fathoms of water, 1 cable from the shore. Seldom used by vessels.

PORT TUDOR.

Port Tudor, in lat. $4^{\circ}0' S.$, long. $39^{\circ}40' E.$, is just above Mombasa, and is reached by a narrow winding channel, 8 to 20 fathoms deep. The anchorage is in 5 to 10 fathoms, mud. It is seldom used by vessels.

EAST AFRICA (GERMAN).

The German sphere of influence in East Africa extends over an estimated area of 384,000 square miles, the territory protected having a coast-line of 620 miles, reaching from the mouth of the Umba to Cape Delgada. The native population of this territory number over 7,000,000 and the European 2,845. The oversea trade is valued at about two million pounds sterling per annum. The chief imports are cottons, rice, produce, hardware, and construction iron; and the principal exports, rubber, coffee, ivory, copra, wax, and fibre. The principal seaports are Dar-es-Salaam, Bagamoyo, Kilwa, Lindi, Mikindani, Pangani, Saadani, and Tanga, but not all of these are accessible to ocean-going vessels. The internal communications, road, rail, and river, are fairly good. There is a telegraph service with the chief commercial centres and with Zanzibar. On the acquisition of the territory by Germany in 1884 a special coin of the value of the rupee was introduced, but the old silver dollar continued to be generally used as a basis of calculation where coin was adopted. The practice of barter is still nearly universal, but to further the use of a coin currency an Imperial Rescript was issued in November, 1908, granting permission for copper 5 heller and nickel 10 heller pieces to be minted for use in the Protectorate.

DAR-ES-SALAAM.

Dar-es-Salaam, in lat. $6^{\circ}42'$ S., long. $39^{\circ}5'$ E., is the principal port of German East Africa.

Population.—24,000.

Accommodation.—The outer anchorage is in 7 to 8 fathoms, sand and mud, protected by Makatumba Island during the S.W. monsoon, but during N.E. monsoon a swell sets in. The entrance is narrow and crooked, so that although there is a depth of 20 ft. at low water springs, and 34 ft. at high water springs, it can only be recommended to vessels of moderate draught. There is plenty of room inside the harbour, which is perfectly land-locked; there is a floating dock, length on blocks 213 ft., breadth of entrance 55 ft., depth on blocks 20 ft., lifting power, 2,000 tons.

Port Regulations.—Vessels may enter and leave the port after dark if previous arrangement is made with the Harbour Office, in which case the buoys marking the channel are lighted.

Vessels intending to enter this harbour should telegraph to the port captain the anticipated time of arrival so as to avoid delay.

Vessels entering may, with the permission of the harbour authorities, make use of the mooring buoy anchored in the harbour.

The mooring of ships in the floating dock or the fastening of boats, etc., to same, or to its anchor chains, or to any buoy anchored in its neighbourhood is prohibited. The floating dock may only be used by permission of the port commandant.

Vessels desirous of taking in sand ballast must obtain permission from the harbour authorities and must inform the Customs Office. Ballast may only be taken from the specified places.

East Africa (German)—Dar-es-Salaam (*continued*).

Pilotage.—Compulsory, in and out, except for Government vessels and vessels under 100 tons reg. Vessels up to 1,000 gross reg. tons, 30 rupees each way, and 1 rupee for every additional 100 tons.

Port Charges.—**Lighting Buoys** :—50 rupees. **Charge for Use of Mooring Buoy** :—15 rupees. **Mooring and Unmooring** :—Boat and crew, 5 rupees. **Ballast** :—Sand, 1 rupee per 10 tons. **Ballast Dues** :—1 rupee per vessel. **Boat Hire** :—Rates according to agreement.

TANGA.

Tanga is in lat. $5^{\circ}10'$ S., long. $39^{\circ}5'$ E.

Population.—5,700.

Accommodation.—The anchorage is safe and well sheltered, in 4 to 8 fathoms, close to the town; vessels of the largest draught can enter.

This is a rising port of entry for German East Africa, and the starting point of a railway into the interior.

Meat, fish, vegetables, and fruit, plentiful.

EAST AFRICA (PORTUGUESE).

The Portuguese possessions in East Africa consist of State territories and of those administered under Royal Charter by the Mozambique and Nyasa Companies. The area is 293,400 sq. miles, and the population 3,120,000. The total trade of the combined territories is of an annual value (1906) of £8,767,103, made up of imports (for home consumption), £1,682,189; goods in transit, £6,043,997; and exports, £1,040,917. The imports consist mainly of ironwork, timber, maize, spirits, beer, and wine, and the exports, rubber, wax, ivory, sugar, nuts, and mining products. On the Zambesi river flat-bottomed stern-wheel steamers ply from the port of Chinde to Tete. A railway connects the port of Beira with Umtali, the frontier town of Mashonaland, continuing thence to Salisbury and Bulawayo. Delagoa Bay is in direct communication with the Transvaal goldfields by means of a railway running from the port to the Transvaal border, which it crosses at Komati Poort, and thence to Pretoria and Johannesburg. A branch line through Swaziland is now in course of construction. There is telegraphic communication between Delagoa Bay and the Transvaal, Beira and Salisbury, and Quilimane and Chiromo.

The Portuguese coinage has a limited circulation. In Government departments the milreis is taken as having a value of 4s. 5d. or 4,500 reis = £1 sterling; but in commercial transactions the British sovereign has an exchange value averaging 4,900 reis. British gold and silver coins circulate freely. At Mozambique the currency is chiefly British Indian rupees, the average exchange being 14 rupees = £1 sterling.

BEIRA.

Beira, in lat. 19°50' S., long. 34°50' E., is situated at the mouth of the Pungwe river.

Population.—4,400.

Imports.—General merchandise, machinery, cotton textiles, and building material.

Exports.—Rubber, ground-nuts, beeswax, cotton, sugar, bark, iron, and zinc ore.

Accommodation.—There is an average depth at high water of 21 ft. and at low water of 17 ft. The channels are well buoyed. Commercial vessels must anchor within the following boundaries: The north boundary, the railway pier, the south boundary, the Intendente's flagstaff. Vessels with explosives or inflammable cargo must anchor between the highest gable of the Donna Amelia Hospital to the north, and the old Point de Gea lighthouse to the south, having the Island of Utanhe bearing N. 15 W. The anchorage for vessels in quarantine is to the north of the Mozambique Co.'s powder magazine. Tugs and lighters are obtainable.

The Macuti lighthouse, situated in lat. 19°50' S., long. 34°53' E., is

East Africa (Portuguese)—Beira (*continued*).

101 ft. in height, painted black with white horizontal stripes, and visible by day 21 miles and at night 18 miles.

This is the port of entry for the Mozambique territory and Rhodesia.

A number of steamship lines call here regularly.

Railway connection with Bulawayo, Cape Town, Victoria Falls, and Broken Hill.

Pilotage.—The pilot service is good, the pilot boat being anchored $\frac{1}{3}$ of a mile to the N. of the anchorage buoy in the South-East Channel. During strong southerly winds the pilot boat is anchored near Buoy No. 4.

Rates paid on ship's gross tonnage as follows :—

	Minimum.	Maximum.
Up to 500 tons, if no pilot required, free.	—	—
Up to 500 tons if pilot required	7,500	—
Every ton over 500 to 1,000, 5 rs. per ton	7,505	10,000
Every ton over 1,000 to 2,000, 3 rs. per ton	10,003	13,000
Every ton over 2,000 to 4,000, 2 rs. per ton	13,002	17,000
Every ton over 4,000 and upwards 1 rs. per ton	17,001	—

Vessels with transhipment cargo only, up to 500 tons gross, if no pilot required, free. Vessels over 500 tons gross, with transhipment cargo, pay 50 per cent. of the tonnage dues. Only vessels not carrying cargo to or from Beira are charged pilotage.

Port Charges.—Tonnage Dues :—Vessels with cargo to or from Beira :—

	Minimum.	Maximum.
Vessels up to 50 tons	7,500	—
Every ton over 50 to 200, 100 rs. per ton	7,600	22,500
Every ton over 200 to 500, 75 rs. per ton	22,575	45,000
Every ton over 500 to 1,000, 50 rs. per ton	45,050	70,000
Every ton over 1,000 and upwards, 25 rs. per ton	70,025	—

Customs Dues :—Vessels from foreign ports, 12,320 reis ; vessels from a Portuguese port, 8,720 reis. **Lighterage :—**7s. 6d. per ton. **Ballast :—**3s. 6d. per ton. **Towage :—**£15 per service. **Landing Cargo :—**Average rates, 6s. to 7s. 6d. per ton of 2,240 lb. or 40 cub. ft. **Shipbroker :—**Entrance and clearance, £10 10s. Commission on freight, 5 per cent. **Stevedore :—**Loading or discharging, 1s. 3d. per ton. **Provisions :—**Fresh provisions can be obtained at reasonable prices. Tinned and other provisions kept in bond. Fresh water, 3s. per ton.

Pro Forma Charges on a steamer :—

	£	s.	d.
Port dues, 360 tons cargo, 34,500 rs.	7	13	4
Customs dues, 8,720 rs.	1	18	4
Consuls fee (English bill of health)	0	10	0
Stevedoring	22	16	0
Stamps and postages	1	5	0
Boat hire	1	1	0
Commission, 2½ per cent. on disbursement	0	17	6
Entrance and clearance fee	10	10	0

£46 11 2

CHINDE.

Chinde is in lat. 18°45' S., long. 36°37' E.

Population.—1,800.

Imports.—Cotton goods, soap, candles, brass wire, beads, provisions, beer, wines and spirits, etc.

East Africa (Portuguese)—Chinde (*continued*).

Exports.—Sugar, ground-nuts, oil-seeds, coffee, beeswax, tobacco, chillies, beans, bark, ivory, rubber, etc.

Accommodation.—The bar is 2 miles from the entrance and has, at low water springs, generally a depth of 4 ft. ; springs rise 12 ft., but with good tides up to 14 ft. ; neaps rise $8\frac{3}{4}$ ft. Printed notices have been issued instructing mariners how to enter the harbour, but as the bar is continually shifting strangers should employ a pilot. Within the bar the depths increase to 3 and 4 fathoms, and abreast the British concession there is 31 ft. There is one small tug in Chinde, used for towing lighters in the harbour ; but there are two tugs running between Beira and Chinde, used for towing the large sea-lighters, as all cargo for Chinde is transhipped into lighters at Beira. There is a patent slip for vessels of 50 tons. Small repairs are executed.

Pilotage.—The charge for pilotage into the harbour is 25,000 reis.

Port Charges.—Harbour Dues :—Vessels coming in, 4,000 reis. ; vessels going out, 4,000 reis. **Bill of Health :**—With stamp duty, 1,300 reis. **Customs Clearance :**—Vessels with cargo, 2,400 reis ; without cargo, 400 reis. Vessels not employed in regular service, 9,000 reis ; vessels arriving for the first time at any Portuguese port on the coast, 100 reis per reg. ton. Provisions abundant. Climate comparatively healthy.

DELAGOA BAY.

Lourenço Marques, in lat. $25^{\circ}53'$ S., long. $32^{\circ}50'$ E., is situated on the western shore of Delagoa Bay, on the northern bank of the fine estuary formed by the confluence of the Matalla, Tembe, and Umbelois rivers.

Population.—9,849.

Imports.—General merchandise, maize, and timber.

Exports.—Practically nil.

Accommodation.—The sheet of water which forms Delagoa Bay is 22 miles broad from Inyack lighthouse to the western shore, where Lourenço Marques is situated, and 26 miles long measuring from Cutfield Hummocks to Inyack. At the entrance to the bay is a series of sand-banks, but wide and deep channels give ready access at this point. At spring tides there is an average depth in the Hope Channel of 24 ft. at low water, while the Cockburn Channel, under corresponding tidal conditions, would have 30 ft. of water. The rise and fall of spring tides in ordinary weather is about 13 ft. At the entrance to the harbour is a less extensive series of sand or mud banks, through which three channels lead, the deepest of which has 28 ft. of water on the highest tides and 22 ft. at high water at neap tides. Inside the bar is the anchorage itself, of considerable extent and with a good breadth of deep water. On the northern side of this are the wharf and piers, and at the upper (western) end Port Matolla, belonging to the Lingham Timber and Trading Co.

In rough weather any shipmaster exercising ordinary care and knowledge can gain the shelter of Elephant Island and Inyack, and lie there in comparative comfort till it suits him to enter the river. Many Admiralty charts, reflecting the state of affairs prevailing years ago, refer to the unreliability of the buoys under the control of the Portuguese authorities. The stigma no longer holds good, and the path to a safe anchorage from the open sea is well indicated.

East Africa (Portuguese)—Delagoa Bay *(continued).*

The main wharf is 3,000 ft. long, while seven or more large steamers lying end to end may be accommodated at the quay wall.

The equipment of the port for handling cargo consists of four Temperley transporters and six cranes, three 10 ton, one 5 ton, one 10 ton, and one 20 ton. There are also six capstans, and both these and the wharf cranes are worked by electricity; and except for heavy lifts no charge is made for use of cranes. The lighter dock has several small steam cranes. A row of large sheds front upon the wharf, the total shed area being 16,200 square metres. Fresh meat may be had and also other provisions, but all are more or less dear.

Small repairs to machinery can be executed. There is a small patent slip for vessels of 7 ft. draught.

Pilotage.—Compulsory. A pilot boat is stationed on the north side of Inyack, where shelter is obtained from southerly winds. **Pilot Fees:**—For sailing vessels or steamers:—

	Entering or leaving the Harbour. Per $\frac{1}{2}$ ft. of draught.	Movements within the Harbour. Per $\frac{1}{2}$ ft. of draught.
	Reis.	Reis.
Vessels drawing up to 14 feet.	1,000	200
" " " 20 " "	1,250	250
" " " 28 " "	1,500	300
Changing of Anchorage Ground.		
		Reis.
Vessels drawing up to 14 feet draught		400 per foot
" " " 20 " "		500 "
" " " above 20 " "		600 "

In the case of ships calling regularly at intervals of not more than once a month, an allowance of 25 per cent. is made; and in that of those entering the port twice within 30 days, 50 per cent.

Towage:—For sailing vessels or steamships in ordinary weather:—

	Reis.
For vessels drawing up to $14\frac{1}{2}$ feet	7,000 per mile.
" " " 20 $\frac{1}{2}$ " "	9,000 "
" " " 21 " "	10,000 "

Port Charges.—Payable in gold at the current rate of exchange for the day, average 4,900—£1 sterling.

Tonnage Dues:—Ocean-going vessels, sailers, 100 reis per net reg. ton; steamers, 50 reis; steamers trading regularly between Portugal and the province, 20 reis. Steamers or sailing vessels trading from or to ports lying between Durban and Mombasa and the African coast and Diego Suarez and Cape St. Marie on the west coast of Madagascar, 8 reis. Local coasters, trading between provincial ports, per ton as above, per annum, counting from the date of payment, 200 reis. These dues are only levied in the case of vessels taking or landing cargo. **Customs Fees:**—Ocean vessels taking or landing cargo, 9,000 reis; ocean vessels not taking cargo, 1,000 reis; coasting vessels, 600 reis; local coasters, 300 reis. **Health Visits:**—Ocean vessels over 500 tons net reg., 2,400 reis; under 500 tons, 1,200 reis; coasting vessels, when not calling at provincial ports, 800 reis; coasting vessels when from provincial ports affected with any contagious disease, 1,000 reis.

Health Certificates:—1,200 reis (payable at first port of call). **Stamps** on clearance certificates, ocean vessels, 800 reis; coasting vessels, 150 reis; local coasters, 100 reis. **Port Dues and Clearance Certificate:**—8,500 reis for each vessel entering and leaving the port. **Ballast:**—Sand, taken from beach, 71 reis per ton; ballast contractors' charge, 840 reis. **Coal:**—Bunker

East Africa (Portuguese)—Delagoa Bay (*continued*).

coal trimmed into bunkers of vessels at wharf, 15s. per ton (average); vessels in the stream, 16s. 6d. per ton. **Wharf Dues** :—Per ton of cargo from or to vessels alongside, 225 reis; horses and cattle, 450 reis per head; sheep, goats, and swine, 112·5 reis (goods and live stock from or for provincial ports, one-fourth of the ordinary rates). Coal and mineral ores from Transvaal, 18·75 reis per ton shipped. (Payment of wharf dues must be made in gold, at the rate of 4,500 reis=£1.) Steamers at the wharf are required to land an average of 350 tons and sailing vessels 150 tons per working day. The demurrage charge is 10 reis per day per net reg. ton. **Landing Charges** :—From 4s. to 4s. 10d. per ton. Large consignments or contracts at considerably lower rates. **Storage Rates** :—Free storage at the wharf sheds is given for the first 48 hours, reckoned from the time of completion of the vessel's discharge. Afterwards the goods are removed to the King's warehouses, and are subject to a charge of 200 reis per cbm. per day. A charge of 1,200 reis per ton is made for removal to the King's warehouse. **Water** :—Drinking water, 2s. 8d. per ton, subject to the following discounts :—

41 to 85 tons	2½ per cent.
86 „ 160 „	5 „
161 „ 230 „	7½ „
231 „ 300 „	10 „
301 „ 450 „	15 „

Boiler water, 1s. 9d. per ton, subject to the following discounts :—

31 to 170 tons	5 per cent.
171 „ 300 „	7½ „
301 „ 400 „	10 „
401 „ 500 „	12½ „

Water to steamers lying in the river, 5s. 6d. per ton.

Pro Forma Charges on a vessel of 6,000 net tons, with 4,000 tons of cargo, drawing 27 ft. :—

	Reis.	£	s.	d.
Customs charges including health officers' fees	13,500	—	—	—
Captain of port fees	8,500	—	—	—
Pilotage in on 27 ft. draught	81,000	—	—	—
„ out on, say, 20 ft.	50,000	—	—	—
Wharf dues on 4,000 tons cargo discharged at 1s.		200	0	0
Dues on steamers entering the port not running regularly between Portugal and the Colonies 50 reis per net ton	300,000	—	—	—
	453,000	=	100	13 4
		£	300	13 4

IBO.

Ibo is in lat. 12°17' S., long. 40°30' E.

Population.—About 5,000.

Imports.—Cotton goods, beads, powder and guns, hardware, wines, etc.

Exports.—Mealies, ground-nuts, and sesame.

Accommodation.—The anchorage for all steamers is about 4 miles off the coast. Only small lighters of about 30 tons can enter the inner harbour.

Port Charges.—See **Mozambique**.

East Africa (Portuguese).

INHAMBANE.

Inhambane is in lat. 23°54' S., long. 35°28' E.

Population.—3,500.

Accommodation.—There is a depth of 17 to 19 ft. on the bar at low water springs; tides rise, springs 11 ft., neaps 7 ft.

The town is 14½ miles from the bar, and the passage from the bar to the anchorage is well buoyed. Vessels drawing 25 ft. can anchor within 30 yards of the shore, opposite the town. Ships up to 5,000 tons have entered, and larger vessels could enter without the slightest risk.

Pilotage.—Compulsory both ways. Vessels drawing up to 14 ft., 8s. per foot; up to 24 ft., 12s. per foot.

Ships of a regular line calling not less than once a month are entitled to a reduction of 25 per cent.

Additional fees and certificates for each ship amount to £2.

Supplies of cattle, poultry, fruit, and vegetables, and small quantities of good water can be obtained.

MOZAMBIQUE.

Mozambique is in lat. 15°0' S., long. 40°35' E. Climate unhealthy.

Population.—About 5,500.

Imports.—Cotton goods, beads, brass and copper wire, bar iron, dry goods of every description, guns, powder, and lead, hardware, wines, spirits and beer, preserved meats, fruits, and vegetables, etc.

Exports.—Ground-nuts, sesame, rubber, and mangrove bark.

Accommodation.—Vessels drawing 25 ft. of water may enter and find anchorage in Mozambique harbour, but the space for such is limited. A pilot can be obtained, but he is of little use, except when proceeding to the inner anchorage, which is in 5½ fathoms, about 2 cables from the shore. The harbour is provided with good entrance lights.

There is a stone pier, but it does not extend far enough out to be of any service in landing cargo.

Coasting vessels of small burden are built here.

The East African Telegraph Co. has a station here.

Pilotage.—Compulsory. 40 reis per ton, whether pilot is employed or not (maximum, 50,000 reis).

Port Charges.—**Tonnage Dues** :—50 reis per ton; vessels arriving with cargo direct from Lisbon pay 20 reis per ton. **Health Office Visit** :—1,200 reis. **Port Captain's Fee** :—8,100 reis. **Customs Visits** :—1,200 reis each. **Customs Guard on Board** :—400 reis per day. **Bill of Health** :—1,500 reis. **Lighterage** :—30s. per day for a lighter carrying from 10 to 15 tons, and 50s. for lighters carrying 40 tons. **Water** :—Delivered alongside at £1 per ton. Fresh provisions and stores can be obtained, but prices are high. **Coal** :—Good Cardiff, 65s. to 80s. per ton, placed alongside.

Pro Forma Charges on a sailing vessel of 235 tons reg. :—

	Reis.
Pilotage, 80 reis, in and out	18,800
Captain of port	8,100
Bill of health	1,500
Tonnage dues, 50 rs. per ton	11,750

Carried forward 40,150

East Africa (Portuguese)—Mozambique (continued).

Brought forward	Reis.
Clearing fees, Customs	40,150
Stamps	10,000
	300
	<hr/> 50,450 = £11 4s. 3d. <hr/>

(Guards on board free.)

Pro Forma Charges on a steamer of 1,395 tons reg. :—

Pilotage (maximum)	Reis.
Captain of port	50,000
Bill of health	8,100
Tonnage dues, 50 rs. per ton	1,500
Customs clearing fees	69,750
Stamps	10,000
	300
	<hr/> 139,650 = £30 19s. 4d. <hr/>

(Guards on board free.)

POMBA BAY AND PORT AMELIA.

Pomba or Pemba Bay is in lat. 12°55' S., long. 40°30' E.

Accommodation.—There is a fixed white light, visible at 9 miles, on the north point of Pemba Bay—Point Said Aly. It is 53 ft. above the sea level, and is erected on an iron tower 45 ft. high, at a distance of 35 ft. from the extreme point. At a distance of a cable length there is a great depth of water. Inside the bay a cylindrical buoy, painted black, marks the extreme north of a sandbank which extends from a short distance from Point Pampira, at the south of the bay, where the Fiscal Post is situated. There is a white light with a red disc shown from this post to show the said sandbank. A red light will mark the extreme point of the stone pier at 6 fathoms.

Vessels making for the anchorage must enter the bay, sail dead W.S.W. until passing the Fiscal Post or black buoy, leave this to port and go south of it, where the bottom is of sand, with a depth of 12 to 15 fathoms.

PORT AMELIA lies inside the southern promontory, that is to say, on the east side of Pemba Bay. The entrance to the bay has, at its narrowest part, a breadth of 1 sea mile 2 cables of navigable water, and is easy of access in all weathers and winds, and vessels of any draught can enter within 150 yards of the head of the present constructed pier. Pilotage is not compulsory, but can be obtained if required.

QUILLIMANE.

Quillimane, in lat. 17°35' S., long. 37°20' E., is a small maritime town in Mozambique, situated on the river Quaqua, which during some of the rainy seasons connects with the river Zambesi.

Population.—About 3,500.

Accommodation.—There is 9 ft. of water on the bar at low water ordinary springs. Tides rise 12 ft. The town is about 12 miles from the mouth of the river. Although the Admiralty directions state that no vessels drawing more than 12 ft. of water should attempt to cross the bar, it has been crossed in safety by the British India Co.'s steamers monthly, and by men-of-war and other vessels at various times, the average draughts being 16 ft. The channel over the bar is buoyed, and there is a flagstaff

East Africa (Portuguese)—Quillimane (*continued*).

and a lighthouse, with a fixed white light, visible 12 miles, on Tangalane Point, connected by telegraph with Quillimane.

There is a station of the Eastern Telegraph Co.'s here.

Pilotage.—Compulsory. 5,000 reis per vessel, whether a pilot is employed or not.

Port Charges.—**Tonnage Dues** :—Steamers, 50 reis per reg. ton; sailing vessels, 150 reis. **Customs Charges** :—About 5,000 reis. **Captain of**

Port's Visit (two) :—4,000 reis each. **Towage** :—From £15 to £25. **Labour** :—Abundant and cheap. Provisions are scarce.

ERITREA.

The Italian Colony of Eritrea, or Erythrea, is situated on the S.W. shore of the Red Sea, the length of the coast-line being about 670 miles, and the total area 88,500 square miles. According to the 1906 census returns, the population of the colony consists of 275,000 natives, and 3,949 Europeans. The trade is of an annual value of about £500,000, five-sixths of which is represented by imports. A railway line is in course of construction from Massowah to Asmara, one section of which (to Ghinda) has been completed and opened for traffic. There is a telegraph and postal service. The currency is that of Italy, together with a number of Eritrean dollars (= 5 lire), $\frac{4}{10}$, $\frac{2}{10}$, and $\frac{1}{10}$ dollar pieces.

MASSOWAH.

Massowah, or Massaua, is in lat. $15^{\circ}40'$ N., long. $39^{\circ}35'$ E., and is the import and export harbour for all goods to and from Abyssinia.

Population.—18,000.

Imports.—Cotton and silk goods, provisions, guns, glassware, tobacco, matches, rice, etc.

Exports.—Ivory, beeswax, hides, coffee, oils, musk, ghee, skins, mother-of-pearl shells, grain, etc.

Accommodation.—Massowah is situated on an island of the same name, which was formerly separated from the mainland by a channel about $\frac{1}{2}$ a mile wide, but it is now joined to the mainland by a sort of isthmus, which forms the harbour. There is a depth of from 5 to 9 fathoms close to the town. Massowah can be distinguished by a martello tower which can be seen 15 miles, and a lighthouse has been lately constructed. Water can be obtained from two new condensers at the rate of 100 tons per day, and from 3,000 to 4,000 tons of coal is generally kept in store, and which can be supplied by lighter at the rate of 200 tons per day. Vegetables are very scarce, and although a small supply of beef, mutton, poultry, and fish is to be had these are all of poor quality.

Port Charges.—**Harbour Dues** :—10 c. per reg. ton. **Boat Hire** :—3 to 5 fr. per day.

SOMALILAND (BRITISH).

The British Protectorate in Somaliland extends over a strip of land having a coast line starting at a point W. of Zeila and continuing to Bender Siyada on the E. The area is about 68,000 square miles with a population estimated on the most recent returns at about 350,000. The chief imports are rice, dates, and Manchester goods (value 1907-8, £233,238), and the exports, gum, ostrich feathers, skins and hides, sheep, and cattle (value 1907-8, £215,707).

The currency is based on the Indian rupee. Government of India notes are accepted amongst the merchants of the coastal towns; so also is the British sovereign.

The subsidiary coins in circulation are :—Silver : $\frac{1}{2}$ rupee, $\frac{1}{4}$ rupee, $\frac{1}{8}$ rupee. Nickel : 1 anna. Copper : $\frac{1}{2}$ anna, $\frac{1}{4}$ anna, $\frac{1}{8}$ anna.

There are no banks doing business in the Protectorate.

BERBERA.

Berbera, in lat. $10^{\circ}25'$ N., long. $45^{\circ}5'$ E., is situated on the N.E. coast of Africa, in the Gulf of Aden.

Population.—About 30,000.

Imports.—Cotton goods, sugar, rice, dates, etc.

Exports.—Skins, feathers, ghee, coffee, gums, sheep, goats, etc.

Accommodation.—This is the only harbour on this coast. It is formed by a low sandy spit, projecting westward for a mile and a half. The navigable entrance is 5 cables wide. From the entrance, which has 13 fathoms of water, it shoals to 5 fathoms, 3 cables from the Custom House. The anchorage is good and is sheltered from all winds except westerly. There is a pier with 10 ft. of water at its head at low water. Spring tides rise $8\frac{1}{2}$ ft., neaps 6 ft.

Most of the trade is done through or with Aden. The trading season is from October to March.

Fresh water is laid on to the pier.

Fish and meat can be obtained cheaply.

ZEILA.

Zeila, or Zaila, is situated on the Gulf of Aden, in lat. $11^{\circ}20'$ N., long. $43^{\circ}28'$ E.

Population.—About 15,000.

Imports.—Grain, cotton goods, dates, etc.

Exports.—Skins, hides, ghee, and coffee.

Accommodation.—A pier or causeway, inaccessible after half-ebb, runs for 500 yards N.W. from the Custom House. The roadstead, 1 mile from N. to S., and 3 miles from E. to W., affords anchorage in at least $3\frac{1}{4}$ fathoms on mud and sand, about $1\frac{1}{2}$ miles off shore, but the

Somaliland (British)—Zeila (*continued*).

best anchorage is in 4 fathoms, 2 miles north of the town. In the N.E. monsoon, a moderate swell sets in, and increases towards the afternoon.

Pilotage.—Nil.

Port Charges.—**Labour** :—6 a. per man per day. **Boat Hire** :—2 a. per package of $1\frac{1}{2}$ cwts. **Stevedore** :—Discharging, cattle, 1 rupee per head; sheep and goats, 1 rupee per head; miscellaneous cargo, 3 a. per 225 lb.

SOMALILAND (FRENCH).

The French Somali Coast Protectorate embraces an area of about 5,790 square miles with a population of about 180,000, and is administered by a Governor with a Privy Council. The country has scarcely any industries of its own, but owing to the coast fisheries and the inland trade there is considerable traffic. The principal ports are Obok, Tajurra, and Jibouti. The Jibouti-Harar railway, now open for traffic between Jibouti and Diré-Dawah, carries much of the merchandise which formerly passed by way of Zeila and Aden.

JIBOUTI.

Jibouti, or D'Jibouti, is in lat. $11^{\circ}32'$ N., long. $43^{\circ}10'$ E.

Population.—12,500.

Imports.—Arms, cartridges, cloths, provisions, etc.

Exports.—Coffee, skins, wax, etc.

Accommodation.—Vessels anchor in the roads about 1 mile from the quay. Discharging is effected by means of barges. There is a coal depot here.

Fresh water can be obtained at 8 fr. per ton.

OBOK.

Obok (Obokh), in lat. $12^{\circ}0'$ N., long. $43^{\circ}17'$ E., is about 30 miles south of the Straits of Bab-el-Mandeb.

Accommodation.—There are 9 to 16 fathoms of water in the south port, where vessels are protected from all winds except those from S.W. When the wind is from this direction ships can be taken to the N.E. port, but this, being more difficult of access, is seldom used.

TAJURRA.

Tajurra (Tajureh), in lat. $11^{\circ}50'$ N., long. $42^{\circ}50'$ E., is on the north shore of the Gulf of Tajureh.

Population.—About 600.

Imports.—Coarse cloth, salt, frankincense, brass, lead, zinc, etc.

Exports.—Coffee, skins, wax, ivory, etc.

Accommodation.—There is 10 fathoms of water in the harbour, but it is unsafe, and during the S.W. monsoon it is extremely dangerous. The port is rarely visited by Europeans.

SOMALILAND (ITALIAN).

Italian Somaliland consists of a strip of territory 180 miles wide on the E. coast of Africa, extending from the frontier of British Somaliland in the north to the Juba river in the south. It has an area of 100,000 square miles, and a population estimated at 400,000. The principal ports are those of Barawa, Meurka, Magadoxo, and Warsheik, which from being held by the Italian Government under the terms of a lease granted by the Sultan of Zanzibar in 1892 have now (1908) been purchased outright.

BARAWA.

Barawa is in lat. $1^{\circ}10'$ N., long. $44^{\circ}5'$ E.

Population.—5,100.

Imports.—Cotton, sugar, iron, and copper.

Exports.—Grain, myrrh, gums, skins, ivory, and cattle.

Accommodation.—The anchorage is in 4 to 6 fathoms and offers a sufficient shelter during the N.E. monsoon. For large vessels it is only safe from September to November and from February to April.

Fresh provisions, such as beef, mutton, poultry, and milk, can be obtained, but no fruit, vegetables, or wood; fresh water can also be had.

MAGADOXO.

Magadoxo is in lat. $2^{\circ}5'$ N., long. $45^{\circ}25'$ E.

Population.—About 6,000.

Imports.—Sugar, molasses, dates, salt fish, arms, etc.

Exports.—Ivory, hides, gums, and home-spun cloth.

Accommodation.—The roadstead is open and exposed. Large vessels anchor in $14\frac{1}{2}$ fathoms, fine sand, about a mile outside the reef. The port or dhow harbour is formed by a narrow reef, parallel to the shore, and distant from it about $\frac{1}{4}$ of a mile. It has 6 to 12 ft. at low water springs; springs rise 8 ft.

Fresh beef is plentiful. Sheep and goats can be obtained at 1 dol. each.

MERKA.

Merka is in lat. $1^{\circ}44'$ N., long. $44^{\circ}48'$ E.

Imports.—Colonial goods, pearls, petroleum, tobacco, etc.

Exports.—Hides and cotton.

Accommodation.—The anchorage in the roadstead is unsheltered. Large ships can anchor in 15 fathoms, about a mile from the town, but the bottom is sand and coral, and communication with the shore is difficult. During S.W. winds discharging of cargo is difficult.

There is a dhow anchorage close to the S.W. of the town, the entrance of which has 3 to 4 fathoms between the reefs. It is sheltered by the reef at low water, but at high water the swell rolls in over the reef; landing is then frequently impracticable. High water springs rise 8 ft.

SOUTH AFRICA.

CAPE COLONY.

The Colony of the Cape of Good Hope occupies the south-western corner of the Continent of Africa with the Indian ocean washing the whole of its southern shore, and the Atlantic the small portion of its seaboard which faces the west. It has a total area of 276,995 square miles, and a population, according to the census returns of 1904, of 2,409,804, including 1,830,063 coloured people. The seaboard, 1,300 miles in length, is strangely inhospitable; the harbours are mostly unprotected, and the river-mouths are choked by sand-bars. Natural difficulties have, however, been in a number of cases overcome, by human effort, so that the ports of Cape Town, Port Elizabeth, East London, and Mossel Bay are now able to afford accommodation to the largest vessels trading in these waters.

Commerce.—The oversea trade in 1907 amounted to £62,539,535; imports, including specie, £18,025,050; and exports, including raw gold and rough and uncut diamonds, £44,514,485. A large proportion of the imports are merely “in transit” for the adjoining colonies of the Transvaal and Orange River and Rhodesia, whilst the raw gold exported comes almost entirely from the Transvaal and Rhodesia. Cape Colony belongs to the South African Customs Union.

Internal Communications.—Owing to the fact that the Cape Colony has no navigable rivers and that the centres of industry are far apart, the railway, as a means of communication, has been largely employed, the lines open for public traffic in 1908 having a length of a little over 4,200 miles. The principal of these lines run from the ports of Cape Town, Port Elizabeth, and East London (with branches to Port Alfred, Mossel Bay, and Knysna) inland, serving the various colonial towns and tapping the Cape coalfields, and then continuing in two parallel lines, the one on the east, through the Orange River Colony to the Transvaal goldfields, and the other on the west, through Kimberley (the diamond fields) and Bechuanaland on through Southern Rhodesia to the Zambesi, which it crosses just below the Victoria Falls. This line is being continued on to the Congo, and will eventually form the southern section of the Cape to Cairo railway. The roads in the Colony are for the most part good, whilst the post, telegraph, and telephone service has been brought to a high degree of excellence.

Currency, Weights and Measures.—The same as in the United Kingdom with the exception that a Cape ton usually consists of 2,000 lb. and a hundredweight of 100 lb.

Amongst wine exporters the following old Dutch measures of capacity are also used :—

The leaguer	=	152 Dutch gals. or about	$126\frac{1}{11}$	Brit. imp. gals.
Half aum	=	19 “ “ “	$15\frac{3}{11}$	“ “ “
Anker	=	$9\frac{1}{2}$ “ “ “	$7\frac{7}{11}$	“ “ “

Emigration and Immigration.—There are no regulations dealing with the transport of emigrants from this Colony. The immigration of undesirable persons, however, is strictly prohibited. Every immigrant

Cape Colony.

must be able to read and write in some European language (including Yiddish), and be in possession of at least £20. The authorities have the right to refuse admission to any person who has been convicted of murder, rape, theft, fraud, perjury, forgery, or other infamous crime; or one who is a lunatic. Nor will they admit any person, male or female, who lives or has lived on, or knowingly receives or has received any part of the proceeds of prostitution.

But, in the case of an immigrant, who proves that he is seeking admission to the Colony solely to avoid persecution or punishment on religious or political grounds, or for an offence of a political character, or persecution, involving danger of imprisonment, or danger to life or limb, on account of religious belief, leave to land will not be refused on the ground merely of want of visible means of support, or the probability of his becoming a public charge, provided that such immigrant shall only be permitted to land on receiving a license under the hand of the Minister.

Any master of any ship who knowingly directly or indirectly allows any immigrant to leave his ship, whereby such immigrant contravenes any provisions of the Act, and the owners of any such ship which any such immigrant so leaves shall be jointly and severally liable to a penalty of £100, and to a further penalty of £20 for each such immigrant landed in excess of the number of five. Such ship may be refused a clearance till such penalty has been paid, and may in default of payment by or on behalf of the master or owners and by order of the Supreme Court be attached and declared executable in satisfaction of any writ issued for the recovery of such penalty; provided that in lieu of granting such order it shall be lawful for the Court to accept such security for the payment of such penalty as may appear to be adequate.

CAPE TOWN (Table Bay).

Cape Town, in lat. $34^{\circ}0'$ S., long. $18^{\circ}28'$ E., stands on the S.W. side of Table Bay. Distance from Liverpool by sea, 6,076 miles.

Population.—77,668.

Imports.—Coal, timber, general and domestic goods of all kinds.

Exports.—Wool, skins, hides, ostrich feathers, fruit, wine, gold, and diamonds.

Accommodation.—The harbour is protected on the north by a breakwater 3,640 ft. long (now being extended to 4,700 ft.), which affords safe anchorage, is easy of approach, and is well lighted. The artificial harbour has been constructed under shelter of the breakwater; it contains 2,400 ft. of quayage with 24 ft. alongside at low springs. The entrance is 250 ft. wide, between two piers, and is easy of access. Depth at entrance 35 ft., low water ordinary spring tides. Running parallel with the breakwater is a quay wall, with projecting jetties, and the East Pier, 786 ft. in length, at right angles to the breakwater. The South Pier, 1,666 ft. to the south of the breakwater, extends 2,060 ft. in an easterly direction with an elbow to the northward 580 ft. long, the two piers enclosing an area of 64 acres. The total length of berthage is about $2\frac{1}{4}$ miles, and the depth of water varies from 20 ft. up to 35 ft. low water ordinary spring tides. The quays and roads are lit by electricity, and a well-organized fire brigade with fire-extinguishing appliances (including the Clayton

Cape Colony—Cape Town (Table Bay) (continued).

machine) are maintained in working order. A plentiful supply of good water is obtainable. There is a dry dock 529½ ft. long over all, 65½ ft. wide at the entrance at the high spring level, and 24½ ft. on the sill at high springs. There is a patent slip with cradle 184 ft. long and 50 ft. wide; lifting power, 1,000 tons. The Harbour Board have sheer legs to lift 50 tons, one 10 ton crane and two 4 ton cranes.

The port is well equipped with sheds, warehouses, etc. Cape Town is in direct railway communication with all parts of Cape Colony, Orange River Colony, Transvaal, Rhodesia, and Natal.

The outer anchorage is safe; when the wind is blowing from the south, vessels arriving at night may, with advantage, anchor N. of the break-water, in from 9 to 12 fathoms, where they will be in a good position for dropping into the inner anchorage on the wind falling. Spring tides rise and fall 5 ft., neaps 3 ft., at full and new moon. High water at 2.30.

Time Signals.—A ball is dropped at noon, Cape Colony mean time, at Alfred Docks, equal to 22 h. 0 m. 0 s. Greenwich mean time, and 23 h. 13 m. 41 s. local mean time. A gun is also fired on Imhoff battery at the same time, equal to 23 h. 13 m. 0 s. local mean time.

Pilotage.—Optional. If taken the charges for pilotage in or out of the docks or basins, or to the anchorage, not to exceed the following :—

In or out of docks—

	£	s.	d.
Ships of war and steamers under 2,500 tons gross reg.	2	0	0
„ 2,500 tons and over	3	0	0
Sailers under 500 tons	1	0	0
„ 500 and under 1,000 tons	1	10	0
„ 1,000 and under 2,000 tons	2	0	0
„ 2,000 and over	3	0	0

For either shifting in dock or the bay the same amount is again payable. The charges for pilotage in and out of the port not to exceed the following :—

From within the limits of the jurisdiction of the Board to a safe anchorage, or vice versa, the same as for docking or undocking.

For every mile beyond the above limits 10s. per mile, but special services rendered may be charged at a special rate, which if disputed may be finally settled by the Board.

Port Charges.—Harbour Dues :—On all vessels excepting His Majesty's vessels and vessels belonging to the Colonial Government entering inwards, but not coming into dock, 1d. per gross reg. ton per diem or portion thereof. On hulks and lighters in the Bay, 5s. per 100 tons gross reg. or portion thereof per calendar month or portion thereof. In the case, however, of vessels merely calling for orders, one day's harbour dues will constitute the maximum charge. On vessels with mutinous crews, or in want of medical assistance, no charge is made, provided such vessels do not land or embark passengers or discharge or ship cargo.

In docks or basins :—

On steamers of the Mercantile Marine—

- | | |
|--|--|
| (a) While only discharging coal | ¾d. per ton per diem or portion thereof, plus 25 per cent. |
| (b) When in distress | ¾d. do. do. |
| (c) All others | 1d. do. do. |
| (d) When re-entering within 40 days, after having returned from another port, for one re-entry only | ¾d. do. do. |
| (e) Calling for the sole purpose of taking bunker coal, 6d. per ton on the actual quantity of coal taken up to 1,000 tons, and 3d. for each ton over 1,000 tons. The minimum charge to be £12 10s., the maximum charge not to exceed the ordinary dock dues. | |

Cape Colony—Cape Town (Table Bay) (continued).

On men-of-war $\frac{1}{2}$ d. per ton per diem
or portion thereof,
plus 25 per cent.

On all sailing vessels $\frac{1}{2}$ d. do. do.

On all hulks, 6d. per ton per calendar month or portion thereof.

Tugs, lighters, and vessels of 50 tons and under, 4d. per ton per calendar month or portion thereof.

In cases of steamers remaining in docks longer than six days, the 25 per cent. shall not be added to the dock dues accruing after the sixth day.

A day is reckoned as 24 hours, including Sundays, holidays, and non-working days.

NOTE.—An additional day's dock dues will be charged only on vessels remaining in the docks more than an hour over a whole day or days; in other words, an hour's grace will be allowed before additional dock dues are levied.

The charges will be on the gross tonnage, and the tonnage of any deck cargo will be added to the gross tonnage, provided the vessel is carrying a full cargo below, and until such time as the deck cargo is completely discharged; goods carried on deck for safety and perishable articles to be exempt.

Dock dues are charged from the time vessels pass through the entrance to the Victoria Basin until the time they pass out again, and harbour dues from the time vessels enter the bay until they leave it.

There are no light or hospital dues.

Towage.—

Sailing vessels :—

For towing in and out of docks or basins from and to the anchorage, 4d. per ton gross reg., to include removals in docks or basins.

Steamers :—

For assisting or removing in docks or basins: For one tug, £5; for a second tug, £2 10s.; for attendance only, £2 10s.

NOTE.—If any Company undertakes to use a tug for all its steamers when entering or leaving the docks the charge will be £3.

Sailing vessels :—

For towage from sea to anchorage, rates to be arranged.

For towage from anchorage to sea—

Vessels under 600 tons gross	£	s.	d.
	6	0	0

For every additional 100 tons, or part thereof, up to 1,100 tons an additional charge of	1	0	0
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Vessels over 1,100 tons and not exceeding 1,249	12	0	0
---	----	---	---

.. of 1,250	13	0	0
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.. .. 1,400	14	0	0
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.. .. 1,600	15	0	0
---------------------	----	---	---

.. .. 1,800	16	0	0
---------------------	----	---	---

Vessels exceeding 2,000 tons, for every additional 250 tons or part thereof	1	0	0
---	---	---	---

For salvage and other special services the charge will be fixed by the Board according to the circumstances.

In case of detention of a tug, a charge of £3 per hour in addition to the ordinary charge will be made.

For any services not specified above, the charge may be arranged according to the nature of the services.

Discharging :—Vessels use their own gear, and may discharge with their own crew, or employ a stevedore. The minimum discharge per diem allowed under the regulation is :—Sailing vessels under 1,000 tons, 100 tons; from 1,000 to 2,000 tons, 150 tons; over 2,000 tons, 200 tons. Steamers under 1,000 tons gross reg., 150 tons; 1,000 to 2,000, 200 tons; over 2,000, 250 tons. The actual rate almost invariably depends upon the facilities the vessel can give. For the use of electric cranes for loading or discharging cargo, 5s. per hour; after working hours, 7s. 6d. per hour.

The maximum rates for stevedoring by the Table Bay Harbour Board are as follows :—

Cape Colony—Cape Town (Table Bay) (continued).

	Sailing Ships.		Steamers.	
	Per ton.		Per ton.	
	s.	d.	s.	d.
General cargo to 3 tons	0	10	0	9
Bricks	1	1	0	10
Coal, including use of bags.	1	5	1	1
Coal, direct into railway wagons, in bulk	0	11	0	8
Coal, if bags supplied by ship or consignee	1	2	0	10
Coke	50 per cent. on coal rates.			
Frozen meat (nets and gear supplied by stevedore)	—		0	11
Grain and flour in bags	0	10	0	8
Fodder, oats, and bran (per ton of 40 cub. ft.)	0	10	0	8
Flooring and ceiling boards	1	4	0	10
Deals and lumber	1	4	0	9
Logs	1	9	1	4
Sleepers, per ton of 2,000 lb.	0	11	0	8
Nitrate in bags	1	1	0	10
Sulphur	1	1	0	10
Rails	1	4	0	10
Railway material, up to 5 ton lifts	1	1	0	10
Cattle and horses	2s. 6d. per head, steamer only.			
Sheep	3d. per head, steamer only.			
Discharging or loading in the bay	The above rates plus 50 per cent.			
Discharging from peaks, poops, or lazarettes	Double above rates.			
Shifting and re-stowing cargo	Actual cost of labour plus 10 per cent.			
Transshipping cargo	Above rates to be charged each vessel.			
LOADING :—				
General cargo	0	10	0	9
Baled produce	0	3	per bale.	
Scrap iron	2	0	1	7

Overtime to be charged—Above rates plus half actual cost of labour.

The ton is to be 40 cub. ft. or 2,000 lb., at stevedore's option, unless otherwise stated.

Steamers to supply gear, steam, winch driver, or crane as required.

Sailers to supply gear.

Board to supply steam or crane if required.

Lighterage :—Before any cargo is lightered, permission must be obtained from the Secretary to the Harbour Board, from whom lighters may be hired at rates to be agreed upon.

When requested the Board will undertake all work in connection with lighterage, including receiving at ship's side, granting receipt, and landing on quay, wharf, or jetty, including the use of lighter and towage, at the following rates :—

	s.	d.
*(a) Coal in bags	3	0 per ton.
(b) Coal in bulk	3	0 „
(c) Timber—deals, boards, planks, wagon wood, sleepers	4	0 „
(d) Grain and bagged cargo	3	6 „
(e) Iron rod and bar	5	0 „
(f) All other cargo	3	6 „

Minimum charge as for one ton.

*When stevedoring is performed by the Board, otherwise 3s. 6d.

Graving Dock :—The following articles are supplied by the Board free of charge in docking vessels, viz., set of blocks for the length given at the time of booking, horizontal shores, a gangway, bilge blocks and wedges sufficient, first set of capping pieces. Extra charges will be made for all caps split out, and all blocks, wedges, and other materials destroyed; also for all labour required in shifting blocks, etc., or for other purposes after the vessel has been shored. The dock to be cleared and cleaned at vessel's expense previous to undocking.

TARIFF.

	£	s.	d.
(a) Docking and undocking vessels of 500 tons and upwards, per reg. ton gross—for repairs	0	1	0
Rent Charge.—For every 24 hours or portion of 24 hours' occupation of the Graving Dock, per reg. ton gross	0	0	3
Minimum charge, 1 day's rent.			

Cape Colony—Cape Town (Table Bay) (continued).

£ s. d.

(b) Docking and undocking vessels of 500 tons and upwards, per reg. ton gross, for purpose of inspection, cleaning and painting, and any small repairs which may be found necessary; provided the vessel does not occupy the dock longer than four days, inclusive of day of docking and undocking, otherwise charges under Clause (a) will be imposed for docking and rent	0	0	9
Rent Charge.—For every 24 hours or portion of 24 hours' occupation of the Graving Dock, per reg. ton gross	0	0	3
Minimum charge, 1 day's rent.			

Docking charges for vessels under 500 tons are subject to special arrangements to be made by the Board.

One day is allowed for docking and one day for undocking under the above charges, and rent is not charged on Sundays or public holidays unless work is done.

Patent Slip:—No vessel exceeding 500 tons gross reg. will be taken on the Patent Slip.

Taking up and launching for repairs, 1s. per gross reg. ton.

Taking up and launching for inspection or cleaning and painting only, 9d. per gross registered ton.

Minimum charge, £5.

*Rent Charge.—For every 24 hours or portion of 24 hours' occupation of the slip, 3d. per gross reg. ton.

Minimum charge, £2.

*One day is allowed for slipping and one day for launching under this charge. Rent is not charged for Sundays or holidays unless work is done.

Every vessel using the Patent Slip will be charged one day's rent in addition to the charge for slipping and launching.

Water:—Supplied direct to boats at the quay from mains, per ton of 200 gallons, 3s. To vessels in the bay by tugs or water boats, per ton of 200 gallons, 7s. 6d.

Ballast:—No ballast may be landed or shipped at the docks or basins except by permission of the Secretary of the Harbour Board, and at such places as he may point out. All expenses connected therewith shall be borne by the vessel, and ballast landed shall become the property of the Board. Ballast is supplied by the Board during working hours at the following rates:—

Earth ballast, put on board, per ton	0	4	0
Stone ballast, when procurable	0	5	0

Permission may be granted on application to the Dock Traffic Manager for ballasting after hours at an additional charge of 1s. per ton.

Coal:—Bunker coal is put on board at the following rates: Natal coal, 30s.; Welsh coal, 40s., both per ton of 2,240 lbs.

Labour:—3s. 6d. to 5s. per day.

AGENCY AND COMMISSION.

For entering and clearing vessel	£5 5s.
For procuring freight	5 per cent.
For procuring charter or passage money	5 "
On ship's disbursements when not in funds	5 "
Negotiation of loan, or realization of bonds, or bottomry, or respondentia.	2½ "
On consignment of vessels, agent's commission for transacting ship's business, including collection of freight	2½ "
Ordinary survey of merchandise	£2 2s.
Survey of ship's hatches	£1 1s.
Survey of damaged cargo in hold	£3 3s.

Cape Colony—Cape Town (Table Bay) (continued).

Provisions are cheap and plentiful. Repairs can be executed by contractors in the town.

Crane Hire (when steamer in crane berth):—Each crane £2 5s. per day.

Port Regulations:—The port captain boards every vessel arriving and points out berths, which must not be changed without his sanction. Copy of regulations is put on board. Master must produce ship's register and papers, and deliver list of passengers and stowaways, giving rank, sex, and occupation, with list of any deaths or removals during voyage. If intending to enter docks he must produce ship's register at the Port Office.

Customs Requirements:—The master, whether his vessel be laden or in ballast, must, within 24 hours after arrival and before bulk be broken, report arrival and particulars of the ship, voyage, crew, passengers, cargo, stores, etc., and must deposit manifest of the cargo at the Custom House.

Quarantine:—If vessel has a clean bill of health the port captain gives pratique. If from an infected port, or having infectious or contagious disease on board, the medical officer makes examination, and his instructions must be obeyed under heavy penalty. In case of quarantine passengers are landed and ship disinfected. Master must furnish declaration of health on arrival.

Shipping Master:—Agreements with crews, indentures, etc., must be delivered to shipping master.

Post Office Requirements.—Master must deliver to postmaster all public mails, loose letters, postcards, packets, or newspapers for delivery in Cape Colony, except letters concerning goods on board. He must also furnish certificates to that effect.

Pro Forma Charges on a steamer of 3,000 tons gross reg., with a cargo of grain in, and ballast out, drawing 24 ft. loaded:—

	£	s.	d.	£	s.	d.
Harbour dues at 1d. per reg. ton (gross) per day for 10 days	125	0	0			
Plus 25 per cent.	31	5	0			
				156	5	0
Brokerage, entering and clearing at Customs				5	5	0
Pilotage, in and out				6	0	0
Boat hire				2	0	0
Stevedore, say 5,000 tons at 8d. per ton				166	13	4
Medical officer				3	3	0
Noting protest				0	7	6
Surveyor's fees				3	3	0
				£342	16	10

EAST LONDON.

East London, in lat. 33°2' S., long. 27°52' E., is situated on the Buffalo River.

Population.—25,220.

Exports.—Wool, mohair, ostrich feathers, hides, skins, horns, grain, etc.

Accommodation.—The mouth of the river is protected by a breakwater 1,600 ft. in length. The width of the entrance to the river, between the end of the south breakwater and east pier, is 600 ft. The width between the river training walls is 250 ft. The best anchorage in

Cape Colony—East London (*continued*).

the roadstead is in about 12 fathoms, with two flagstaffs (painted white, with black mastheads) in one, bearing about W. by N., and Nahoon Point, N.E. by E. $\frac{1}{2}$ E. The dock area extends inland from the mouth of the river which is known as Buffalo Harbour, and is 100 acres in extent. The depth of water on the bar varies from 18 to 22 ft. at low water ordinary spring tides. Tides rise 5 ft. 6 in. Powerful dredgers are employed in maintaining and improving the entrance channel, and steamers of over 8,000 tons reg. enter the river and discharge their cargoes alongside the wharves. During 1907 85 per cent. of the cargo landed at the port was received from ships which discharged alongside wharves in the river. Mail steamers, and occasionally other steamers with small consignments, are the only vessels that discharge in the roadstead. The length of the wharves is 5,342 ft., and this is constantly being added to. This includes a concrete quay 515 ft. in length, with a berth alongside of 27 ft. 9 in. at low water ordinary springs. It is equipped with a 50 ton steam crane, an installation of one 5 ton and three 3 ton hydraulic cranes, and an ample supply of other steam discharging appliances. There is also a new quay 950 ft. in length, on the west bank of the river, with a berth alongside of 27 ft. 9 in. of water at ordinary spring tides. It is equipped with one 20 ton and six 3 ton electric cranes, 20 steam cranes of $2\frac{1}{2}$ to 15 tons lifting capacity, one 50 ton steam crane, four hydraulic cranes, and ten steam winches, besides electric and other gantries of a capacity up to 30 tons for dealing with logs and machinery.

The Harbour Board possesses powerful tugs, also a fleet of lighters with an aggregate carrying capacity of 2,500 tons. There are twenty-three sheds and bonded warehouses with a floor area of 220,000 sq. ft., and a capacity of 61,000 tons, and further shed accommodation is in course of erection. There is an extensive stacking area furnished with powerful gantries and travelling steam cranes upon which machinery, timber, and rough goods may be stored in the open. No rent charge is made upon machinery, rough timber, or pipes, thus stored, if consigned to Bloemfontein and stations north thereof in the Orange River Colony and the Transvaal. The charge for other goods stored in the open is $1\frac{1}{2}d.$ per ton per week. The rent charge for goods stored under cover and in bond is very moderate.

Machinery and all heavy packages are loaded direct from the ship's hold into railway trucks, and special "Well" wagons are provided by the railway department for packages requiring such. The still water of the harbour and its remarkably sheltered position, together with the excellent equipment of cranes which it possesses, specially fit it for dealing with heavy machinery. The Harbour Board has extensive workshops fitted with the most modern machine tools for dealing with all classes of ships' repairs, and a patent slipway capable of receiving vessels up to 1,000 tons dead-weight. Every facility is given for effecting repairs to hull and machinery.

The harbour is connected by rail with all important towns in South Africa, and is the shortest Cape Colonial route to the Transvaal goldfields.

Time Signals.—A ball is dropped at noon Cape Colony standard mean time, on an iron frame, on a hill 200 yards S.W. by S. from Signal Hill. Noon Cape Colony standard mean time is equal to 22 h. 0 m. 0 s. Greenwich mean time, and 23 h. 51 m. 39.7 s. local mean time.

Pilotage.—The following pilotage fees are payable by all vessels entering and leaving the Buffalo River :—

Removals.—When vessels in the river (after first mooring on arrival) are moved or swung, either to the wharves, to or from the buoys, or alongside other vessels for transshipping, the following charges will be made (as per net reg. tonnage), for steamers, sailing vessels, and hulks :—

Port Charges.—Harbour Dues :—4*d.* per ton on the net registered tonnage, or 1*s.* per ton on every ton of goods landed ^{and} or shipped; the total charge not to exceed the total charge computed on the net registered tonnage at 4*d.* per ton.

For taking up and launching from slip, per gross registered ton, 1s. ; minimum charge, £20. This does not include the removal of keel blocks, which will be done upon request at cost price. Rent for patent slip—vessels of 160 gross registered tons, and under, for every working day's occupation of a berth on the slip, £3 ; vessels above 160 gross registered tons, for every working day's occupation of a berth on the slip, at per gross registered ton, 4½*d.* Three clear working days' occupation of a berth on the slip is allowed without rent. When work is wholly suspended on Sundays or public holidays such days will not be charged for. The above charges will not be enforced for any day after a vessel is ready to leave her berth on the slip, if detained by the action of the Board.

Towage Charges :—For towing vessels in or out of the Buffalo river :—

To be paid by the master, owner, or agent of vessel using tug.

Cape Colony—East London (continued).

CHARGES FOR USE OF CRANES.

	£	s.	d.
For use of steam winches, per hour, each	0	2	6
Minimum charge	0	10	0
For use of steam or hydraulic cranes, per hour, each	0	5	0
Minimum charge	1	0	0
An additional charge of 5s. per ton or part of a ton will be made for each hoist exceeding 2½ tons in weight.			
For use of 50 ton crane per hour, during working hours	0	10	0
For use of 50 ton crane per hour, after working hours	0	15	0
Minimum charge	2	10	0
An additional charge of 5s. per ton will be made for each hoist exceeding 17 tons (of 2,000 lb.) in weight.			
For use of the Temperley Transporter on the West Bank of the Buffalo River :—			
Per hour or part of an hour	0	5	0
Minimum charge	1	10	0

TARIFF FOR USE OF DIVER.

	£	s.	d.
Use of diver and gear per day of four hours	5	5	0
Submarine survey by diver of ship's bottom, with certificate	2	2	0

This charge is a fee to shipwright's diver for his services, and is in addition to charge for use of gear, etc. Special rates will be charged in cases where diver is required for a less period than a day of four hours, or for any considerable time.

LIGHTERAGE.

	£	s.	d.
For conveying goods from ship in roadstead to alongside wharf, per ton	0	5	0
For conveying goods from river to alongside ship in roadstead, per ton	0	2	6

Pro Forma Charges on a steamer of 7,355 tons reg. :—

	£	s.	d.
Harbour dues at 4d. per reg. ton	122	11	8
Pilotage, in and out	7	7	0
Towage, in and out	20	0	0
Boat hire	1	0	0
Entering and clearing, agency	5	5	0
	£156	3	8

HONDEKLIP BAY.

Hondeklip Bay is in lat. 30°18' S., long. 17°17' E.

Imports.—Colonial produce and manufactured goods.

Exports.—Skins, wool, grain, etc.

Accommodation.—The anchorage in the harbour is in about 12 ft., and is only suitable for vessels drawing 9 ft. The outer anchorage is in 6 to 20 fathoms, rocky bottom, and is quite open, but may be considered safe during the summer months. Communication with the shore is sometimes interrupted for a week at a time.

The clinching of the shackle pins as far as 45 fathoms is recommended, as it is no unusual circumstance for a vessel to lose two of her anchors. Assistance boats can be obtained. Steamers and sailing vessels can generally get away in 4 or 5 days.

Pilotage.—All vessels should employ a pilot. Charge for pilotage, 30s.

Port Charges.—**Stevedore** :—Loading or discharging, 10s. per ton.

Ballast :—5s. per ton. **Labour** :—Charges moderate. There are no charges on vessels.

Provisions :—Beef and mutton, 2½d. per lb. Fresh water can only be obtained in the winter months.

Cape Colony.

ICHABO ISLAND.

Ichabo Island is in lat. $26^{\circ}17'$ S., long. $14^{\circ}55'$ E.

Export.—Guano.

Accommodation.—The anchorage is between the island and the mainland, in $4\frac{1}{2}$ to 8 fathoms water, about a quarter of a mile from shore. Vessels should be well found in ground tackle, as they sometimes drag with two anchors, but the anchorage cannot be considered dangerous.

The prevailing winds are mostly from S.S.W. to S.S.E., blowing strong at times. N.W. winds bring thick fogs, damp, cold, and disagreeable weather. These winds are most common in the fall of the year. The coast is imperfectly surveyed.

Vessels bound here are generally chartered by a company in Cape Town, by whom the guano islands on this part of the coast are worked. Ballast in and guano out are the almost invariable cargoes.

The guano is sent alongside in boats carrying 4 to 5 tons.

No water or fresh provisions can be obtained here, or at any of the other islands, so that vessels should be supplied with at least two months' extra supply of water.

Edible birds' eggs and fish can be obtained.

There are no dues or charges of any kind.

KNYSNA.

Knysna is in lat. $34^{\circ}1'$ S., long. $23^{\circ}3'$ E.

Population.—1,600.

Imports.—Groceries and soft goods.

Exports.—Timber and sleepers.

Accommodation.—There is a depth on the bar at low water of 16 ft. No vessel drawing over 15 ft. should enter this port, as some allowance should be made for the swell on the bar. There is a wharf here 370 ft. in length, with a depth alongside of 27 ft. at high water, and 21 ft. at low water, and 20 ft. at lowest spring tides. The tide rises 6 ft.

Pilotage.—Compulsory. 4s. 6d. per foot draught of vessel.

Port Charges.—**Mooring** :—20s. per vessel. **Wharfage** :—On goods only, $\frac{1}{2}$ per cent. **Agent's Clearance Fees** :—£2 2s. **Towage** :—About £10 10s. **Boat Hire** :—20s. **Ballast** :—3s. per ton. **Labour** :—2s. 6d. to 3s. per day.

Pro Forma Charges on a steamer of 500 tons reg., with cargo of wool in, and ballast out, drawing 10 ft. loaded :—

	£	s.	d.
Brokerage	2	2	0
Pilotage, in and out, 20 ft. at 4s. 6d.	4	10	0
Towage	10	0	0
Boat hire	1	0	0
Mooring fees	1	0	0
	£18	12	0

Cape Colony.

MOSSEL BAY.

Mossel Bay is in lat. $34^{\circ}10'$ S., long. $22^{\circ}15'$ E.

Population.—Town and district, 10,650; port only, 4,206.

Imports.—General merchandise and coal.

Exports.—Aloes, sheep and goat skins, wool, ostrich feathers, cereals, etc.

Accommodation.—Mossel Bay affords excellent shelter to vessels of any size. During N.W. gales, which are prevalent during the winter months, April to September, it is perfectly smooth. S.E. gales are at times experienced during the summer months, but any danger to shipping is rare, as steamers are able to put to sea, and, the holding ground being good, sailing vessels well found with ground tackle and good coir springs are invariably safe. The handling of cargo is in the hands of the Mossel Bay Boating Co., and the port is well equipped with tugs, lighters, and all necessary plant, including a slipway; cradle 68 ft. long and 22 ft. wide, with a lifting power of 180 tons. Besides the two jetties, which are protected by a substantial breakwater and provided with four steam cranes to lift 3 tons each, there are the quay walls, upon which there is a 10 ton crane for dealing with heavy lifts. The jetties are served with lines of rail of the Cape Government Railway standard gauge, and connected direct with the main line for the purpose of facilitating the landing or shipping of goods direct from railway trucks. General cargo is landed or shipped at the rate of 1,000 tons per day. The storage accommodation is excellent, and is sufficient for dealing with cargoes from distressed ships.

The best anchorage for steamers is in from 4 to 7 fathoms (according to draught of water and state of sea) with the two beacons on the hill at the back of town in line. This also brings the port office flagstaff into line and bears S.S.W. magnetic. The above depths are found from 4 cables to 1 mile from the flagstaff. The tide rises 6 to 7 ft. at springs. At night a red light on the jetty is seen from seaward, changing to green when brought to bear S.W. $\frac{3}{4}$ S. Sailing vessels are anchored in about the same line in 6 or 7 fathoms.

The harbour master meets all ships on arrival between sunrise and sunset, and appoints a proper anchorage, afterwards boarding the vessel and leaving on board a copy of the port regulations.

Regular steamship communication with Europe, New York, Mauritius, India, and the Far East.

Railway communication with Cape Town and the East Coast ports.

Pilotage.—Not compulsory and not necessary for steamers. A pilot will meet any ship signalling for him; usual charge 10s. per 100 tons gross reg.

Port Charges.—There are no port dues. **Entrance and Clearance Fees:**—Same as at other Cape ports. **Towage:**—Charges reasonable. Tugs meet sailing vessels when within a 10 mile radius. **Ballast:**—6s. 6d. per ton, placed alongside in lighters, including filling ship's tubs or baskets. **Water:**—10s. per 1,000 gallons at jetty, or pumped on board at anchorage 10s. per 220 gallons. **Coal:**—Can be obtained at reasonable price in sufficient quantities to take a steamer to the nearest coaling port. **Fresh Provisions:**—Meat, vegetables, and fish are plentiful and cheap at all times. **Launch Hire:**—10s. 6d. per day for steamers; sailers, 5s. **Consular Fees:**—£1 1s. **Labour:**—5s. per day.

Cape Colony.

PLETTENBURG BAY.

Plettenburg Bay is in lat. $34^{\circ}3'$ S., long. $23^{\circ}23'$ E.

Population.—1,500 (town).

Imports.—General merchandise.

Export.—Wood.

Accommodation.—The bay is open to the S.E., but affords safe anchorage in 8 to 10 fathoms of water during strong N.E. or N.W. gales. The best anchorage is off the "Gap." A little fresh water can be obtained, but not of very good quality; vegetables are plentiful, and beef and poultry are reasonable in price.

PORT ALFRED.

Port Alfred, in lat. $33^{\circ}34'$ S., long. $26^{\circ}54'$ E., is situated on the Kowie River, 69 miles from Port Elizabeth.

Population.—About 1,000.

Exports.—Oat hay, cereals, ostrich feathers, and citrus and other fruits.

Accommodation.—The anchorage is at the entrance to the river, and is safe for small coasting vessels. Port Alfred is the terminus of the Kowie Railway, which connects with the city of Grahamstown, 35 miles distant. The depth of water on the bar is about 7 ft. at low water; springs rise 4 to 5 ft.; neaps 3 ft.

The entrance to the Kowie River is not safe when the sea breaks across the mouth, but tugboats with good power and double engines can work in and out at almost any time, strong ebb tide excepted.

Small handy steamers and sailing vessels can enter the river during ordinary tides, and discharge alongside the wharf direct into railway trucks or sheds, and a brisk trade might be carried on by vessels of that description.

Vessels must ride with a good coir spring in bad weather, which ought to be supplied before leaving port of departure.

Provisions:—Beef or mutton costs 3*d.* per lb. Vegetables of all kinds are obtainable.

PORT ELIZABETH (Algoa Bay).

Algoa Bay is bounded by Cape Recife at its western and Woody Cape at its eastern extremity, which capes are 33 miles apart; but the name is now more particularly applied to the western end of the bay, otherwise called Port Elizabeth, which is situated in lat. $33^{\circ}58'$ S., long. $25^{\circ}32'$ E.

Population.—32,950.

Imports.—General merchandise.

Exports.—Wool, skins, hides, Angora hair, cotton, linseed, diamonds, horns, ivory, feathers, and aloes.

Accommodation.—Port Elizabeth possesses a magnificent roadstead with excellent holding ground, where vessels can ride with absolute safety if properly found with ground tackle. The prevailing winds are westerly, with intermissions from the south-east. Although there is no

Cape Colony—Port Elizabeth (Algoa Bay) (continued).

artificial harbour for the protection of vessels, still long experience has shown that ships lying in the roadstead can safely and rapidly discharge their cargo. The average number of non-working days owing to bad weather during the past ten years has not exceeded five days per annum. There are three iron jetties, which are equipped with hydraulic cranes of the latest design. (1) The oldest of the three is 1,152 ft. long and 84 ft. wide, and has one 7 ton and six 2 ton hydraulic cranes. Goods landed and shipped pass to and from the Board's warehouses, along the viaduct or south arm of the jetty. (2) The South Jetty, the second in order of construction, is 1,162 ft. long and 108 ft. wide, and, next to the Dom Pedro Jetty, probably the largest jetty of its kind in existence. It is equipped with one 7 ton and nine 3 ton hydraulic cranes, and also an electric crane for dealing with heavy lifts up to 20 tons. This jetty is specially adapted for the discharge of steamers and sailing vessels alongside. (3) The Dom Pedro Jetty is now extended to a total length of 1,462 ft. and a width of 105 ft. This jetty is equipped with four 3 ton, eight 2 ton hydraulic cranes, and a ballast shute. The cranes on the three jetties are capable of dealing with about 7,000 tons per diem. The hydraulic cranes have luffing jibs, and are capable of plumbng two lines of rails on the North and Dom Pedro jetties, and three lines on the South Jetty. Each of the jetties is fitted with a complete installation of electric light and hydraulic capstans. (4) In addition to these three jetties, an isolated iron landing stage, 105 ft. by 36 ft., has been built at the creek, situated at the North End, for landing dynamite and other explosives by means of an aerial tramway, and is capable of landing 5,000 cases per diem. (5) A new patent slipway has been built capable of carrying vessels of 400 tons dead weight, drawing 9 ft. 3 in. to 14 ft. 7 in. at high water springs. Sailing vessels of 800 tons, and steamers of 1,200 tons net reg., drawing about 16 ft., can be berthed at the South Jetty with the utmost safety, as there is a depth of water within 300 ft. from the end of the jetty of 20 ft. at low water springs. Moorings have been laid for vessels at the jetty, and also a large anchor, and cable 600 ft. ahead of the jetty, for vessels to ride by; and as the hydraulic cranes can be shifted, two hatches can always be worked, averaging about 250 tons per hatch of general cargo per diem. At the Dom Pedro Jetty it is possible to berth alongside vessels of about 2,000 tons net reg. Repairs, which do not require the vessel to be docked, can be undertaken. When signals to prepare for foul weather are made from the port office, sailing vessels with doubtful ground tackle should get under way, making their first tack towards St. Croix Island. Coal for steamers can generally be obtained in small quantities and at somewhat high prices, the demand being small.

Time Signals.—Chronometers can be checked. A ball is dropped at the lighthouse at noon Cape Colony mean time, equal to 22 h. 0 m. 0 s. Greenwich mean time, and 23 h. 42 m. 29.3 s. local mean time.

Pilotage.—Pilotage is not compulsory at Algoa Bay, and the Harbour Board is not responsible for any accidents which may occur to vessels while in charge of its pilots or tugs.

Sailing vessels engaging pilots beyond a three miles' radius from the Port Elizabeth Hill lighthouse are charged 12s. 6d. per 100 tons gross reg., with the minimum charge of £5 10s.

Cape Colony—Port Elizabeth (Algoa Bay) (continued).

Sailing vessels engaging pilots within a three miles' radius are charged £2 15s.

Steamers engaging pilots within a three miles' radius are charged £5 10s. for inward pilotage, and an additional £2 15s. if outward pilotage services are rendered.

These charges include berthing pilotage.

Pilotage to and from Jetty.—The charge for this service in the case of steamers is £2 5s. and for sailing vessels £4 10s. If a vessel has to leave the jetty by instructions of the harbour master, and returns thereto with the original cargo, the pilotage on the second and on any subsequent occasion will be reduced to half of the above-mentioned charges. **Towage:**—The services of the Harbour Board's steam tugs are rendered to vessels requiring same, within the prescribed zones, viz., a radius extending 10 miles from the Port Elizabeth Hill lighthouse, embracing a vessel $4\frac{1}{2}$ miles off Cape Recife, and a half-mile to the westward of the islet of Jahleel in the bay, according to the following tariff:—

Vessels of	100 to	600 tons register					£	s.	d.
	100 to	600 tons register	.	.	.	.	12	10	0
"	601 ..	800 ..	.	.	.	.	14	0	0
"	801 ..	1,000 ..	.	.	.	.	16	10	0
"	1,001 ..	1,250 ..	.	.	.	.	18	15	0
"	1,251 ..	1,500 ..	.	.	.	.	22	0	0
"	1,501 ..	1,850 ..	.	.	.	.	24	15	0
"	1,851 ..	2,000 and over	.	.	.	.	27	10	0

The above charges include towage in from radius, mooring in berth, towing out to two miles clear of anchorage, and supply of tow line. Vessels coming within a three miles' radius of the Hill lighthouse without tug assistance will be charged £7 10s. for mooring in berth appointed by the harbour master, and £2 15s. for outward towage to two miles outside anchorage. Tow line is supplied free. The charge for shifting berth and re-mooring is £5 10s. The charge for hire of tug holding vessels to clear hawse, or keeping vessel end on to sea to facilitate discharge, etc., is £3 5s. per hour. If the services of the tugs are required for outward towage or for other purposes after working hours, or on Sundays and holidays, the net extra cost of working the tug will be charged in addition to the above tariff. Any special service will be charged for according to the nature of such service. Vessels requiring the use of tugs outward should give 24 hours' notice of same to the harbour master. For vessels coming alongside the Board's jetties the following towage charges are made:—

For 1 tug, £1 for every 100 tons register up to 300 tons, and 10s. for every 100 tons over 300.
For 2 tugs, £1 10s. for every 100 tons register; maximum charge, £12.
For 1 tug standing by vessel at jetty all night, £3 per night.

A towage charge of 2d. per ton (chargeable against the ship) will be made for towage of cargo between explosives anchorage and jetties. Salvage services are not provided for in the above pilotage and towage charges.

Port Charges.—The port is an absolutely free one, there being no harbour or light dues charged to vessels of any flag. **Landing Charges:**—The rate for landing and delivering general goods into town ranges from 3s. 6d. (from vessels alongside the jetties) to 5s. per ton; for goods intended for direct transmission by railway, from 1s. 6d. to 4s. per ton. Machinery, railway material for mining purposes, and rough timber, such as logs, deals, and the like, not planed or grooved, for Rhodesia and Trans-

Cape Colony—Port Elizabeth (Algoa Bay) (continued).

vaal, are stored free of charge. The landing charges enumerated represent the whole cost of handling goods from ship's side to delivery on railway trucks for dispatch to destination or to merchants' stores in town.

Water :—Water will be delivered at the following rates per ton of 250 gallons. Into vessels at anchorage by Harbour Board tank boat alongside—

	s.	d.
Up to and including 10 tons, per ton	10	0
Every additional ton	5	0
Into tugs and launches alongside of Board's jetties, per ton	1	6
Into sea-going vessels alongside of Board's jetties, per ton	2	0

Ballast :—The Board supplies ballast at the following prices :—

	Ship at jetty.	Ship in roadstead.
	s. d.	s. d.
Sand, per ton of 2,000 lb.	3 0	6 0
Stone, „ „	6 0	8 0

For any ballast supplied after working hours a charge to cover actual cost will be made in addition to the above. **Provisions** :—Plentiful and at moderate prices. Bread, 3d.; fresh meat, 5d. per lb. **Stevedore** :—For stowing vessels, including all the necessary gear for so doing, labour, etc., 8d. per bale of wool, washed and unwashed; 8d. per 1,000 goat and sheep skins; 2s. 6d. per 100 hides; general cargo, 10d. per ton. $3\frac{1}{4}$ bales of unwashed wool may be reckoned to the registered tonnage, and $3\frac{1}{2}$ bales washed. One bundle of 100 wool sheep skins equal to 1 bale wool for stowing; 10 bundles (of 100 each) goat skins to 6 bales wool; 15 bundles hides to 1 bale wool.

Brokerage :—The following are some of the charges regulated by the mercantile community :—

On ships' disbursements	5 per cent.
„ „ if funds in hand	2½ „
„ procuring freight	5 „
„ collecting freight for ships bound to Port Elizabeth	2½ „
„ guaranteeing sales, bills, or bonds, by endorsement or otherwise	2½ „
„ effecting remittances by bills of exchange	1 „
„ the negotiation of bills	1 „
„ effecting insurance	½ to ¾ „
„ cash advances	5 „
For passage money, on obtaining passages	5 „

Goods are usually sold at six months' credit. Current rate of interest, 8 per cent. Entering and clearing a vessel at Customs, 2 guineas; consignment of vessels, the agent's commission for transacting ship's business (including that on collecting and procuring freight and passage money), in no case to be less than 6d. per ton on the cargo delivered.

Wharfage :—Wool, shipped or landed, per 100 lb. weight, 4½d.; other articles ditto, per £100 value, 7s. 6d.

Exemptions :—1. All public stores, naval or military baggage, and personal baggage of passengers.

2. Ships' stores outwards.

3. All goods shipped, on which dues have been paid on entry.

4. All goods shipped to, or landed from, any place within the colony.

5. Bullion and coin.

Notice to Shipmasters.—Vessels bound for this port with general cargoes often experience delay in having to pick out certain marks, to be landed in boats belonging to different companies—an evil which might be

Cape Colony—Port Elizabeth (Algoa Bay) (*continued*).

remedied by having a clause inserted in their bills of lading that the entire cargo is to be landed by boatmen appointed by ship's agents. The constant tumbling about of cargo in a ship's hold not only causes delay but very frequently damage, which is an endless subject of litigation. All captains should insist upon receipts being given for cargo delivered into the boats. When this is done vessels are discharged quickly.

In loading wool cargoes vessels experience no delay whatever. They are generally choked with wool faster than it can be screwed down; 80 to 100 bales of wool a day is as much as can be conveniently stowed after the ground tier is laid.

Port Instructions.—1. In the case of vessels about to discharge or receive on board any considerable quantity of cargo, a convenient berth will be pointed out by the harbour master, as close to the landing place as the safety of the vessel and other circumstances will admit. The vessel must then be moored with two bower anchors, with an open hawse to the south-east, and special care taken not to overlay the anchors of other vessels, or in any way to give them a foul berth. But all vessels not provided with anchors and cables according to Lloyd's scale of tonnage are to be anchored to the northward of the other vessels until so provided.

2. In the case of vessels touching for water and supplies, they may ride at single anchor, but they must then anchor well to the northward, so as to prevent danger (in case of drifting) to the vessels moored; and it is particularly recommended, when riding at single anchor, to veer out 70 or 80 fathoms of chain; the other bower cables should be ranged, and the anchor kept in perfect readiness to let go.

3. Strict attention must be made to keep a clear hawse (when moored), the more so when it is probable the wind may blow from the south-east; and whether at single anchor or moored, the sheet anchor should be ready for immediate use. The situation of the vessel must be taken by landmarks and the depth of water; and should any accident occur by which she may drift from such situation, or lose her anchors, the same must be notified in writing to the harbour-master.

4. It is recommended that vessels be kept as snug as possible, especially such as may have to remain some time in the anchorage, for the periodical winds blow occasionally with much violence. Topgallant masts and yards should be sent on deck, but topsails, courses, etc., should be kept bent and reefed until the vessel shall have become so much lightened as to leave her no chance for working out in case of parting, when they should be unbent and repaired, if necessary, and bent again as soon as there is sufficient cargo on board to render the vessel manageable under sail.

5. To prevent injury to the jetties by vessels drifting upon them during S.E. gales, no sailing vessel is permitted to lie to the S. of a line from the Hill lighthouse through the North Malay Mosque; and should any vessel anchor S. of this line, she must shift her berth to N. as soon as circumstances will permit. Steamers to anchor to S. of above line. A green light is shown at the end of the North Jetty as a guide to boats landing at night, visible from N. 15 W. round by the E. to S.E.; the latter line leads well outside the shoal of the old breakwater; inshore of these bearings the light shows a bright white. At extreme end of the South Jetty there is a red light, visible all round seaward.

6. All vessels lying in this port shall show lights at night, as prescribed

Cape Colony—Port Elizabeth (Algoa Bay) (continued).

in Arts. 2 and 7 of the Board of Trade Regulations for preventing collisions at sea.

7. When it becomes necessary for vessels to veer cable in a strong breeze, they must always heave in again to their original scope immediately on the return of moderate weather.

8. All signals made from the port office must be answered from the shipping, and strictly obeyed; any vessel disregarding them will be reported to Lloyd's, as also to their owners.

(The Commercial or International Code of Signals is the only one recognized here. General signals, Commercial Code. Port regulation signals used in signalling to ships in bad weather.)

9. In case of a vessel parting from her anchors and being unable to work out, it is recommended to run her for the sandy beach to the northward of the town, directly in front of the gas-house, at the north end of the sea wall (on the chimney of which, at 45 ft. above the sea, a powerful gas-light is shown during the S.E. gales, as a guide to vessels that part from their anchors during the night), keeping the head sails set even after striking, for the purpose of assisting in grounding the vessel firmly. No person should attempt to quit the vessel after she has taken the beach, until the lifeboat arrives alongside, or a communication is established with the shore by means of Manby's apparatus or otherwise.

10. On all occasions when it may be considered unsafe to work cargo, a blue flag will be hoisted on the flagstaff on the North Jetty; and when it is unsafe to land, a red ball will be hoisted; it is recommended that ships' boats should never attempt to land at these times.

PORT NOLLOTH.

Port Nolloth, or Robbe Bay, is in lat. $29^{\circ}15'$ S., long. $16^{\circ}52'$ E.

Population.—About 1,000.

Imports.—Manchester goods, woollens, silks, hardware, groceries, etc.

Exports.—Copper ore, hides, horns, etc.

Accommodation.—There is a pier with sometimes 10 ft. of water at the end, and at others only 7 ft., owing to the drift sand. To the south of the pier there are strong moorings, and vessels drawing 8 ft. can safely come to these moorings. Springs rise $5\frac{1}{4}$ ft. and neaps $3\frac{1}{2}$ ft. Vessels are well sheltered. Those of large draught anchor in 25 fathoms in the open roadstead, about $1\frac{1}{4}$ miles off shore, with 100 fathoms of chain out. Landing and shipping is in the hands of the Cape Copper Company. They have a railway to their mines, and they also have three steam-tugs and twelve lighters. Steamers of 2,000 tons can discharge and load in about 5 or 6 weeks. There is a patent slip to raise 120 tons. The clinching of shackles to 60 fathoms is advised.

Port Charges.—**Labour** :—Native, 3s. per day. **Ballast** :—5s. 6d. per ton delivered alongside ship. **Provisions** :—Fresh meat, 7d. to 8d. per lb.

PORT ST. JOHNS.

Port St. Johns is in lat. $31^{\circ}38'$ S., long. $29^{\circ}28'$ E.

Population.—450.

Cape Colony—Port St. Johns (*continued*).

Imports.—Blankets, ploughs, European clothing, etc.

Exports.—Mealies, hides, skins, and wool.

Accommodation.—There is a depth of 9 ft. at high tide, and of 3 ft. at lowest spring tides. There is a wharf 200 ft. long. A sand bar about 100 ft. wide lies across the mouth of the river. The river is navigable for 12 miles, width 1,200 ft., with a depth of about 15 ft. inside. Depth on the bar about 8 ft. After the wet season there is sometimes a depth of 15 ft. at low water on the bar, but it shoals up to 5 ft. low water in the summer months. The Colonial Government intend developing this port.

Pilotage.—Piloting vessels in or out of the St. Johns River, 15s. each way. The employment of a pilot is not compulsory, but every vessel crossing the bar each way must follow the leading marks, which are placed in a conspicuous position, and for erecting which a charge of 15s. is made.

Port Charges.—**Harbour Dues** :—4d. per net reg. ton. **Wharfage Dues** :—Wool shipped or landed at St. Johns harbour, 3d. per 100 lb. weight ; all other goods, articles, matters, or things shipped or landed at the harbour, $\frac{1}{4}$ per cent. ad valorem. **Lighterage** :—Hire of lighter for use in the river, £1 per day ; for attendance on vessels anchored in the roadstead, £2 10s. per day. **Clearance Fees** :—For small vessels, £2 2s. **Labour** :—1s. to 2s. per day.

ST. HELENA BAY.

St. Helena Bay is in lat. 32°45' S., long. 18°10' E., Cape St. Martin being at the S.W. point of the bay.

Accommodation.—Vessels anchor in 5 fathoms, 3 miles off the mouth of the Berg River. In the summer months, when S. winds prevail, the water is quite smooth, but in the winter months, it is not considered safe. Vessels discharge by means of lighters. A vessel of 350 tons reg., drawing 12½ ft. loaded, discharged 150 tons of ballast and loaded 420 tons of wheat in 12 days.

Port Charges.—Vessels clear at Cape Town, the only expenses at St. Helena Bay being labour, which is 2s. per man per day. **Water** :—Excellent fresh water can be procured from the Berg River. **Provisions** :—Fresh provisions are abundant and cheap, a sheep costing 12s., and every thing else in proportion.

SALDANHA BAY.

Saldanha Bay is in lat. 33°10' S., long. 17°55' E., about 60 miles N.W. of Table Bay.

Accommodation.—There is excellent anchorage for vessels in from 6 to 7 fathoms of water. There is a small bay called Houtjes, where vessels can be hove down. Fresh water is obtainable only in limited quantities, but cattle and sheep can be easily procured.

SIMONS TOWN.

Simons Town, in lat. 34°10' S., long. 18°25' E., is situated on Simons Bay, an inlet on the west side of False Bay.

Population.—6,643.

Accommodation.—The usual anchorage for vessels is in 7 to 10

Cape Colony—Simons Town (*continued*).

fathoms, $\frac{1}{4}$ of a mile off shore. All vessels moor N.W. and S.E., the wind from N.W. prevailing from April to October, and from the S.E. from October to April. The bay is considered safe and easy of access all the year round. There is an efficient patent slip, upon which a vessel of 1,130 tons has been repaired. This slip is the property of the Admiralty, but in cases of actual necessity would be available for merchant vessels, and charges would be according to time and work done. There are three small slips to raise 50 tons each. The Imperial Government are building a large dock, and a large dry dock for the navy; work will probably be completed in August, 1909. The naval authorities now regulate the anchorage of ships and steamers in this bay. This being a naval station, very few ships call here, and those bring coal or stores for H.M. dockyard. In the dockyard there are sheers to raise 15 tons and a portable crane to raise 5 tons.

Railway communication with Cape Town. There is telegraphic communication with Cape Point Lighthouse, by which ships bound either to Simons Bay or Cape Town can make their wants known; passing ships are at once reported by telegram to the Chamber of Commerce. Pilots and steam-tugs can be obtained by signal to the lighthouse.

Time Signals.—Chronometers can be checked. A ball is hoisted on a mast, close to the town Telegraph Office, 5 minutes before the signal. The ball falls at noon Cape Colony mean time, equal to 22 h. 0 m. 0 s. Greenwich mean time, and 23 h. 13 m. 43·98 s. local mean time.

Pilotage.—Not compulsory. The usual charge is 6 guineas inwards and 4 guineas outwards, without respect to the size or draught of vessel.

Port Charges.—Customs Fees:—Entrance and clearance, 2 guineas. **Labour:**—3s. 6d. to 4s. 6d. per day. **Discharging Cargo:**—Usually done by contract, from 4s. 6d. to 6s. per ton, according to the state of trade. **Wharfage:**—1s. to 2s. per ton. **Store Rent:**—6d. per ton per week. **Stone Ballast:**—6s. 6d. to 6s. 9d. per ton put alongside; sand, 3s. 6d. to 3s. 9d. per ton. **Water:**—Put on board by a floating tank, 7s. per ton. If obtained from the main on the pier, 2s. per ton of 200 gals. **Provisions:**—Bread, 3d. per lb., beef and mutton, 6d. per lb. **Coal:**—55s. to 60s. per ton alongside. There are no port or light dues.

WALFISH BAY.

Walfish Bay is in lat. 22°50' S., long. 14°25' E.

Population.—997.

Accommodation.—The bay is spacious and safe. The entrance is $3\frac{3}{4}$ miles wide, and is protected from all winds save N. and N.W., which rarely blow—never with violence. Soundings regular, from 3 to 8 fathoms. The anchorage is in 5 to 6 fathoms, about a mile off shore. High water, full and change, 1 h. 54 m. The tide rises 6 ft. Cargo is landed by means of small lighters.

Communication with the shore is easy and practicable. There is a small settlement with two trading houses. Steamship communication with Cape Town once every 3 weeks.

Provisions can be obtained at moderate prices; condensed water can be obtained from the Government. Fish is very plentiful.

Port Charges.—There are no port dues. **Ligherage Dues:**—

Cape Colony—Walfish Bay (*continued*).

On every ton of merchandise landed or shipped, 6s. 6d. ; on each horse, mule, camel, or horned cattle, 6s. 6d. ; on each sheep, goat, or pig, 1s. 6d. ; on animals not specified above, 1s. ; on coal landed or shipped, 5s. 6d. per ton. **Sand Ballast** :—4s. per ton, not including cost of labour of digging and placing in lighter ; including such labour, 6s. 6d. per ton.

NATAL.

The British Colony of Natal lies on the south-east coast of Africa, between Cape Colony on the west and the Portuguese territories on the north-east. Including Zululand and that portion of the Transvaal which was annexed at the close of the Anglo-Boer war, it has an area of 35,371 square miles, with a seaboard of about 360 miles. The population, estimated on the basis of the census of 1904, is 1,151,907, including Indians and Asiatics 112,126, and natives 945,411.

Commerce.—The total oversea trade of the Colony is of an annual value of about £12,000,000 sterling, two-thirds of which figure as imports. Not more than half of the goods imported are, however, for local consumption, the remainder being “in transit” for the Orange River Colony and the Transvaal. The chief export is Natal coal, extensively used for bunker purposes. Natal belongs to the South African Customs Union.

Internal Communications.—The railway lines belong to the State; the main line connects the port of Durban with Volksrust on the Transvaal border, the line being continued thence to Pretoria and Johannesburg. A branch line from Ladysmith, via Harrismith, opens up connection with the Orange River Colony rail system; other branches bring the main line into touch with Port Shepstone on the south coast, Smokele in Zululand on the north-east, and with Dundee, Greytown, and Richmond. A line has also recently been opened from Pietermaritzburg, via Riversdale, to the Griqualand East boundary, where it joins up with the Cape Government Railway system. A number of privately owned narrow gauge light railways have been constructed so as to open up the agricultural and sugar growing districts of the colony. A state postal, telegraph, and telephone system has been organized on modern lines and is efficiently conducted.

Currency, Weights and Measures.—These are the same as those in use in Great Britain, with the exception that a Natal ton generally consists of 2,000 lb. and a cwt. of 100 lb.

Emigration and Immigration.—There are no regulations dealing with the transport of emigrants from this Colony. Under the provisions of the Immigration Restriction Act, 1903, the immigration into Natal of any person appearing to be of any of the following classes is prohibited:—

- (a) Any person who shall be unable through deficient education to himself write out and sign, in the characters of some European language, an application for permission to land.
- (b) Any person without visible means of support, or any person who is likely to become a pauper or a public charge.
- (c) Any idiot or insane person.
- (d) Any person suffering from a loathsome or dangerous contagious disease.
- (e) Any person who, not having received a free pardon, has been convicted in any country of treason, murder, or any crime for which a sentence of imprisonment has been passed for any term, and who, by reason of the circumstances connected therewith, is deemed to be an undesirable immigrant.

Natal.

- (f) Any prostitute, and any person living on or receiving, or who may have lived on or received, any part of the proceeds of the prostitution of others.
- (g) Any person deemed by the Minister to be an undesirable immigrant in consequence of information or advice received from any Secretary of State or Colonial Minister, or through diplomatic channels or any Minister of a foreign country, or from any other trusted source.

The principal Immigration Restriction Officer is authorized to enter into a contract with the master, owners, or agent of any vessel, for the conveyance of any prohibited emigrant found in Natal to a port in or near to such immigrant's country of birth.

The master of a ship arriving at Natal must, upon being thereto requested by the Immigration Restriction Officer at the port, furnish to him a list, in duplicate, signed by himself, of all passengers and other persons then on board not forming a portion of the regular crew of the vessel.

A master must also, if required thereto prior to his departure from port, produce his articles and muster his crew, and if it be found that any person named on the articles, and who, in the opinion of the Immigration Restriction Officer, would be a prohibited immigrant, is not then present, such person shall be deemed to have entered the Colony contrary to the Act, but the master and agents of the ship, provided they have made proper provision for police protection, will not be responsible for any contravention of the provisions of this section.

If the Immigration Restriction Officer shall declare to the master of a ship arriving at the port that there are persons on board who belong to the class of prohibited immigrants, and should the master thereupon represent that for the better security against infringement of the Act it is desirable that such prohibited immigrants should be kept in some other place during the ship's stay in port, the Immigration Restriction Officer may, in such case, should he think fit, cause such prohibited immigrants to be removed in proper custody from the ship to, and be detained in, any place on shore, or any hulk or craft in the Bay, which may be set apart by the Government for the purpose. Such prohibited immigrants shall be returned to the ship when she is about to sail, of which due notice shall be given by the master to the Immigration Restriction Officer. The cost of the landing or removal, detention, maintenance, and control of the prohibited immigrants so temporarily removed from the ship, and all contingent expenses, shall be borne by the master of the ship, who shall be solely responsible for the proper rationing of the prohibited immigrants so removed, and for providing them with bedding and other necessaries requisite to maintain them in the place of detention in the degree of comfort which they would have enjoyed had they not been removed from the ship, or to which they might be entitled under any contract or agreement subsisting between such prohibited immigrants and the master or owners of the ship. The Immigration Restriction Officer may, before assuming the custody of any prohibited immigrant, require the master and owners or agents of the ship to deposit with him, or give a sufficient guarantee of, a sum sufficient to defray any expenses that may be incurred by the Government in connection therewith.

Should the master of a ship charge any member of his crew, or stowaway, or extra hand before a local court with a crime or offence committed at

Natal.

some time prior to arrival, or during his vessel's stay in port, the magistrate may, at the request of the Immigration Restriction Officer, and on representation by the Immigration Restriction Officer that the accused is a prohibited immigrant, in awarding punishment, order that, on expiry of the sentence, or on the sooner readiness of his vessel to proceed to sea, the prisoner be taken from gaol and conducted in custody aboard his ship for conveyance away from the Colony. Any person contemplated by this section, brought before a magistrate and discharged, shall be ordered by the magistrate to be immediately conveyed back to his ship. An order shall not be made under this section in any case in which the magistrate deems the crime proper for trial in a higher court.

Whenever it shall be deemed necessary for the effective carrying out of this Act to regulate intercourse from the shore with any vessel at the port having on board any prohibited immigrant, the principal Immigration Restriction Officer may take such steps, with the approval of the Minister, as may appear proper in that behalf. The master and owner of any ship from which any prohibited immigrant may be landed or may land shall be liable jointly and severally to a penalty of £100 sterling (which said sum may be reduced to any sum not less than £25 sterling) in respect of each such prohibited immigrant landed or who may land, and the vessel may be refused a clearance outward until any penalty incurred has been paid, and until provision has been made by the Master to the satisfaction of the Immigration Restriction Officer for the conveyance out of the Colony of each prohibited immigrant who may have been so landed, and the vessel may be made executable by a decree of the Supreme Court, in satisfaction of any penalty imposed under the provisions of this law.

PORT NATAL (DURBAN).

Port Natal (Durban), in lat. 29°58' S., long. 31°3' E., is situated on the S.E. coast of Africa. Its position is marked by a prominent headland or bluff (Cape Natal) on the south side of the harbour entrance, 195 ft. above sea level, on which stands the lighthouse, painted white, showing a white revolving light visible 24 miles in clear weather.

Population.—68,360, including 29,802 natives.

Imports.—Clothing, haberdashery, cottons, ironwork, wheat, leather, hardware, cutlery, woollens, machinery, wines, ales, spirits, etc.

Exports.—Wool, hides, horns, skins, sugar, rum, tea, mealies, arrow-root, fruit, coal, wattle-bark, etc.

Accommodation.—This is one of the best equipped and most accessible harbours on the coast. In the outer bay the best anchorage is in 10 fathoms, sandy bottom, with the lighthouse bearing S.W. by S., and Rocket House Beacon W. by N., distant from the Bluff about 1½ miles magnetic. This beacon, situated on the beach facing the anchorage, is triangular in shape, on an iron standard, distinguished from sunset to sunrise by one white electric light showing six scintillations per minute exhibited from the apex of the beacon. Vessels should anchor to the northward of this position in preference to the southward.

The anchorage is open to the eastward, with good holding ground, clear and spacious. The signal station, in the vicinity of the lighthouse, takes

Natal—Port Natal (Durban) (*continued*).

in all signals from the shipping at the outer anchorage, and transmits them to the port office look-out signal station at the Point on the north side of the harbour entrance, and vice versa. Strict attention should be given to signals. As soon as possible after the arrival of a vessel the pratique officer and a pilot visits the ship. If the ship is from a healthy port and has no sickness to report, pratique is at once granted.

Ships' boats should not attempt to cross the bar, however smooth it may appear.

The largest vessels can enter the port with perfect safety, either by night or by day, and land their passengers and cargo on the wharves. The entrance to the harbour from the outer anchorage is by a channel lying between two sea walls; the average low water depth at the harbour entrance during 1907 was 32 ft. 8 in. The average rise of the tides is 6 ft. springs and 4 ft. neaps. On the rare occasions when the entrance is considered impassable a black cone (point downwards) is hoisted at the yard arm at the signal station at the Point and Bluff before sunset, and a red light after sunset. The harbourage proper, which is immediately within the Bay, has an area at full tide of $7\frac{1}{2}$ square miles. The wharfage, nearly 2 miles long, consists of the permanent quay wall, 3,905 ft. long, with a depth alongside of from 25 to 30 ft.; the timber wharf, 1,900 ft. long, depth alongside 14 ft. to 20 ft.; the timber jetties (four), 2,880 ft. long, depth alongside 14 to 20 ft. These are all on the Point side. On the Bluff side there is the timber wharf, 1,050 ft. long, with a depth alongside of 25 ft. At Congella there is 1,300 ft. of wharfage, with a uniform low water depth of 25 ft. alongside. The wharves on this side of the harbour are to be further extended. The Natal Government railway lines run on all the wharves. Fourteen hydraulic capstans for moving trucks are situated at convenient distances along the wharves. There are forty-eight hydraulic cranes to lift from $1\frac{1}{2}$ to 50 tons, seven steam cranes, four to lift 3, and three to lift 10 tons, and one sheers having a lifting power of 20 tons. The floating workshop is provided with a 15 ton steam crane and equipped with machine tools adapted to all requirements. The harbour is also provided with a floating dock, this having a net lifting power of 8,500 tons, the dimensions being as follows: Extreme length over pontoons 425 ft., length over platforms 475 ft., extreme beam over plates 96 ft., width of entrance between fenders 70 ft., width of entrance at level of top altars 61 ft., draught of water over keel blocks 23 ft. There is also a slipway for lifting tugs, lighters and small craft, and a larger one with cradle 200 ft. long and lifting power of 1,000 tons. Three powerful Government tugs are employed in the service of the port. There are, in addition, a number of efficient private tugs, as well as a large lighter plant. Coaling appliances have been erected on the Bluff side of the harbour, consisting of arrangements for putting bunker and export coal on board ship either direct from railway trucks or from storage bins. This plant, worked by electricity, loads into vessels at the rate of 400 tons per hour. The capacity of the storage bins is 10,000 tons.

The "dumper" is capable of dealing with loads up to 120 tons. The "transporters" carry "drop-bottom" buckets of 6 tons capacity, and drop the coal into the hold or bunkers of steamers from such a height as not to break it. The weighing of coal in course of shipment is done automatically, as the "drop-bottom" buckets are on their way to the "transporter." The work of loading and trimming is done by the Harbour Department on inclusive tariff as follows: Into bunkers, 1s. per ton; into holds, $7\frac{1}{2}$ d. per

Natal—Port Natal (Durban) (continued).

ton; into lighters (ex railway truck direct), $2\frac{1}{2}d.$ per ton; into lighters (ex storage bins), $5d.$ per ton (2,240 lb. ton).

Vessels calling for the sole purpose of taking bunker or cargo coal, the product of Natal, and landing or embarking not more than five passengers, will be charged, inclusive of wharfage, pilotage, and light dues, one-half of the ordinary port dues; or alternatively, at the option of the ship, be charged, inclusive of wharfage, pilotage, and light dues, on the actual quantity of coal taken at the rate of $6d.$ per ton up to 1,000 tons, and $3d.$ for each ton over 1,000 tons. The minimum charge in either case to be an amount equal to the ordinary light dues. Such vessels will be entitled to use the floating dock and still claim the rebate.

Time Signals.—A ball is dropped at 1 h. 0 m. 0 s. p.m. Natal standard mean time, on the Bluff, 260 yards from the Bluff lighthouse, equal to 23 h. 0 m. 0 s. Greenwich mean time, and 1 h. 4 m. 1 s. local mean time.

Pilotage.—Compulsory. Rates included in harbour dues.

Port Charges.—Light Dues :—

1. All vessels, except as hereinafter mentioned, anchoring off Port Natal, or entering the inner harbour, pay light dues as follows :—

- (a) For each registered ton up to 500 tons, $2d.$ per ton.
- (b) For each registered ton over 500 tons, $1d.$ per ton.
- (c) For each ton of deck space occupied by cargo, $1d.$ per ton.

2. The tonnage measurement of animals for the purposes of (c) of 1 shall be determined in accordance with the following scale and method :—

For horses, 80 cubic ft. per animal.

For ponies, 55 cubic ft. per animal.

For donkeys, 55 cubic ft. per animal.

For mules, 55 cubic ft. per animal.

For cattle, 70 cubic ft. per animal.

For sheep, 10 cubic ft. per animal.

For pigs, 10 cubic ft. per animal.

For goats, 10 cubic ft. per animal.

Ascertain the product, divide it by 100, and the quotient shall be deemed to be the tonnage upon which dues shall be payable.

3. The following vessels shall be exempt from the operation of the foregoing rules :—

- (a) Vessels anchoring at the outer anchorage with either of the following objects, or from either of the following causes, and not landing or embarking passengers or cargo, that is to say: Vessels (1) calling for orders; (2) seeking freight; (3) in distress; (4) with mutinous crews; (5) with breakdown of machinery; (6) for repairs; and (7) in want of medical assistance. Provided, as regards vessels seeking freight, that they arrive and leave in ballast.
- (b) Vessels entering the inner harbour for repairs, and not landing or embarking passengers or cargo.
- (c) His Majesty's vessels of war, vessels of war of friendly powers, and vessels belonging to colonial governments and to friendly powers not engaged in trade.

Natal—Port Natal (Durban) (*continued*).

Port Dues.—*Outer anchorage* :—Vessels entering inwards but not coming into the harbour, 1*d.* per reg. ton and 1*d.* for every ton deck space occupied by cargo. Vessels not landing or embarking passengers or cargo and only calling (a) for orders or seeking freight ; (b) to coal or for provisions or water ; or (c) in distress, with mutinous crews, breakdown of machinery, in want of medical assistance, or for repairs, are free.

Inner harbour (inclusive of wharfage and pilotage) :—

For each registered ton net up to 400 tons	9 <i>d.</i>
“ “ “ over 400 and up to 1,500 tons	7 <i>d.</i>
“ “ “ over 1,500 and up to 2,000 tons	4 <i>d.</i>
“ “ “ over 2,000 tons	2 <i>d.</i>
“ ton of deck space occupied by cargo	9 <i>d.</i>

The following vessels are entitled to rebate as shown, viz.,

Those entering the inner harbour within 21 days of last departure from the port, 20 per cent. on the port dues. Those entering the harbour and not landing or embarking passengers or cargo, 50 per cent. on the port dues, provided that their stay in the inner harbour does not exceed 14 days, including days of entry and leaving. Vessels entering the harbour under the foregoing conditions and remaining there over 14 days, but not exceeding 18 days including days of entry and leaving, 25 per cent. on the port dues.

Those leaving the harbour within 30 hours of their entrance, 20 per cent. of the port dues ; those that leave within 60 hours of their entrance, 10 per cent. of the port dues ; and 5 per cent. of the port dues in the case of those that may leave within 72 hours of their entrance.

Should a vessel that may earn a rebate under the foregoing rule be prevented from leaving the port at the time specified in her application by reason of the state of the entrance or weather, or insufficient tug service, such rebate may, in the discretion of the port captain, nevertheless be allowed.

Vessels re-entering the inner harbour before their final departure from the port will be charged 25 per cent. harbour dues for each such entry calculated on full tariff rates.

The tariff of charges now in force for the accommodation of vessels in the inner harbour apply to a period not exceeding 3 weeks, exclusive of days of arrival and departure, and after the expiry of that period one-tenth of the tariff rates is charged for each further period of one week or part thereof calculated on full tariff rates. Provided that in cases where vessels are hindered from leaving the port at the time stated in their application by reason of the state of the entrance, or the weather, or insufficient tug service, the port captain may, in his discretion, authorize relief from payment of the extra charges which would otherwise be payable under this regulation.

Vessels allowed to remain at the wharf after the period indicated by the rules for discharge of cargo pay for each succeeding day or part thereof $\frac{1}{2}$ *d.* per net reg. ton, provided that such sum will not be levied during the period for which a vessel may be allowed to be at the wharf to take in outward cargo.

No vessel will be entitled to rebate under more than one rule.

Vessels working overtime on ordinary days between the hours of 6 p.m. and 6 a.m., as well as on public holidays or Sundays, will be charged 1*s.* per hour or portion of an hour in respect of wharfinger's overtime.

Natal—Port Natal (Durban) (continued).

Towage (Government tugs):—

For towing in or out of harbour, within a circle of 81 fathoms of water—

Vessels of—	£	s.	d.	£	s.	d.
100 tons net register, and under	3	0	0			
101 tons " up to 500 tons	4	10	0	to 14	0	0
501 tons " up to 1,500 tons	15	0	0	to 20	0	0
1,501 tons " and over	22	0	0			

For one lighter, £3; and £1 for each extra lighter towed at the same time.

Tug attendance and assistance (steamers):—

For every steamer of 1,000 tons net register and over, entering or leaving the harbour—

	£	s.	d.
Attendance only, in or out	2	10	0
Assistance at wharf, including attendance—			
One tug	3	10	0
Two tugs	5	0	0
Services rendered within harbour—			
One tug	From £2 10s. to £5		
Two tugs	From £3 10s. to £7 10s.		
Services rendered outside the bar—			
One tug	£10 and £1 for warps.		
Two tugs	£15 and £2 for warps.		

NOTES.—Steamers of 600 tons and under 1,000 tons net register, pay two-thirds of these rates; under 600 tons, half rates.

The charge for towage by private tugs is fixed between the parties concerned, not to exceed the foregoing Government scale.

Warps are charged for at £1 per hour in addition to the towage.

An extra charge of £3 per hour is made for undue detention of Government tugs.

In stormy weather an additional charge of 25 per cent. is made for towage or assistance. Towage or other services of a special nature are subject to special arrangement and charge.

Wharf Dues.—

Goods to or from—

Cape Colony	2s. 6d. for every £100 value, and parts pro rata.
All other places	5s. for every £100 value, and parts pro rata.

Wool and Angora hair to or from—

Cape Colony	6d. per bale.
All other places	1s. per bale.

Exemptions.—All public stores, naval and military baggage, and personal baggage of passengers; all ships' stores outwards; all goods shipped upon which wharfage dues have been paid upon importation; all products of the Colony imported by sea; all coin and bullion.

Ballast.—

Ballast at dredger's side	6d. per ton.
Ballast loaded on vessel	3s. per ton.

NOTE.—All ballast conveyed across a wharf or quay is subject to an additional charge of 6d. per ton.

Water.—Ships can obtain a plentiful supply of excellent fresh water, which is laid on to the wharves. The charge is 10s. to 15s. per 1,000 gallons, according to quantity taken.

Bunker Coal.—The price of best coal alongside the wharf, in truck, is 15s. 6d. per ton.

Stevedores.—For ships at wharf the stevedore charges vary from 6d. to 1s. per ton, according to nature of cargo.

Floating Dock and Slip Charges.—

For the first 24 hours or part thereof, including docking or slipping—

	£	s.	d.
For each registered ton up to 1,000 tons	0	0	6
" " " over 1,000 up to 2,000 tons	0	0	5
" " " over 2,000 tons	0	0	3
Minimum charge for first 24 hours, or part	12	0	0
Each subsequent 24 hours, or part, per reg. ton	0	0	3
Minimum charge for each subsequent 24 hours, or part	2	0	0

NOTES.—Tonnage in all cases the gross registered tonnage.

Vessels using the dock or slip beyond four days pay 20 per cent. extra on the charge for such longer period.

Natal—Port Natal (Durban) (continued).

A rebate of 10 per cent. is allowed in the case of any vessel of His Majesty's fleet, or the fleet of any friendly power, as well as vessels belonging to Colonial Governments. Special provision must be made if work is desired on Sundays or public holidays. Vessels under 500 tons register are subject to special arrangements.

Hire of Floating Workshop and Appliances.—

	£	s.	d.
Per ordinary working day	9	0	0
Half ordinary working day	5	0	0

The machines and crane may be engaged separately at reasonable rates.

Charges for Electric Light on Floating Dock.—

	£	s.	d.
Between dusk and midnight	2	0	0
Between midnight and dawn	2	0	0

Pro Forma Charges on a steamer of 3,757 tons net reg., discharging part cargo :—

	£	s.	d.	£	s.	d.
Port dues : 400 at 9d. per ton	15	0	0			
„ 1,100 at 7d. „	32	1	8			
„ 500 at 4d. „	8	6	8			
„ 1,757 at 2d. „	14	12	10			
Deck cargo, 1 at 9d. per ton	0	0	9			
				70	1	11
Light dues, 500 tons at 2d. per ton				4	3	4
Light dues, 3,257 tons at 1d. per ton				13	11	5
Towage inwards				3	10	0
„ outwards				3	10	0
Pilotage inwards				1	0	0
„ outwards				1	0	0
Health officer's fee				1	1	0
Customs				1	6	6
Bill of health				1	0	0
Sundries				7	12	0
Discharging at 10d. per ton				156	10	10
Craneage				14	5	0
Tally clerks				5	10	0
				£284	2	0

PORT SHEPSTONE.

Port Shepstone, in lat. 30°46' S., long. 30°10' E., is situated at the mouth of the River Umzimkulu, and was created a full fiscal port in 1893.

Exports.—Hides, mealies, sugar, tea, coffee, bones, cotton, and lime.

Accommodation.—The River Umzimkulu is choked at the mouth by a sand-spit, and the open channel to the sea is very narrow, with an average depth of from 4 ft. 9 in. to 5 ft. 3 in., but the condition of the port is being rapidly improved under the direction of the Government. The inner water is spacious and navigable for several miles, with fertile back country. The coast for many miles to the N. and S. has not been surveyed; a stranger should therefore exercise caution, and should be certain of his latitude on account of the Aliwal Shoal, about 34 miles to the N., which, however, is marked by two lighthouses, about 5 miles apart. All the trade is done by local small craft, and all, or nearly all, of it goes to Port Natal.

Port Charges.—**Wharfage and Pilotage** :—6d. per reg. ton. **Towage** :—In harbour for 5 hours, £1 per hour. **Lighters** :—Inward and outward, about 5s. per ton.

SOUTH-WEST AFRICA (GERMAN).

The German Government exercise a protectorate over the region lying between Portuguese West Africa and Cape Colony with the exception of Walfish Bay, which belongs to Cape Colony. It has an area of 322,450 square miles and a population estimated at 200,000. The principal harbours are Angra Pequena, Swakopmund and Sandwich Harbour, but the latter is being gradually sanded up. The oversea trade, Government and private, consists almost entirely of imports, and is of an annual value of about $3\frac{1}{2}$ million pounds sterling. The imports include textiles, tobacco, hardware, beer, cereals and fruit, timber, etc. Small quantities of guano and copper ore are exported. There are three lines of railway (from Swakopmund to Windhoek, 237 miles; from Swakopmund to Tsumeb, 359 miles; and from Angra Pequena to Keetmanshoop 184 miles) open for traffic. The territory is brought into direct communication with European countries by means of the Cape and Mossamedes [telegraph cable, which touches at Swakopmund.

ANGRA PEQUENA.

(See **Lüderitzbucht.**)

CAPE CROSS.

Cape Cross, in lat. $21^{\circ}50'$ S., long. $13^{\circ}55'$ E., is about 70 miles N. of Walfish Bay.

There is now no business done at this port.

LÜDERITZBUCHT.

Lüderitzbucht is in lat. $26^{\circ}35'$ S., long. $15^{\circ}10'$ E.

Population.—1,000 Europeans.

Imports.—Stores and building materials.

Accommodation.—Anchorage in 20 to 26 ft. of water. Vessels discharge into lighters.

Pilotage.—Not yet compulsory: £2 10s. each way.

Port Charges.—Towage:—For vessels up to 750 tons £7 10s.; from 751 to 1,500 tons, £12 10s.; over 1,500 tons £15; each way. **Ballast:**—8s. per ton free alongside. **Agency Fee:**—2 per cent., minimum £10. **Bill of Health:**—9s. **Water:**—£1 10s. per ton, free alongside. **Provisions:**—Fresh meat obtainable.

SWAKOPMUND.

Swakopmund, in lat. $22^{\circ}35'$ S., long. $14^{\circ}35'$ E., is situated 13 miles N. of Walfish Bay.

Accommodation.—The anchorage is in $6\frac{1}{2}$ fathoms, $\frac{1}{2}$ a mile from the shore. There is a wooden jetty, with a crane for heavy weights, and two set davits, which enable cargo to be discharged with dispatch in fine weather. Landing is generally difficult.

Steamship communication with Cape Town and Hamburg.

Telegraphic communication with all parts.

WEST AFRICA.

ANGOLA.

Angola is a Portuguese possession on the W. coast of Africa, extending from the mouth of the Congo in the north to the river Kunene in the south. It has, with the Protectorate of Lunda and the hinterland, a total area of 485,000 sq. miles and a population estimated at 4,120,000. The trade of the province amounts to about £2,400,000 per annum, the imports in 1906 being valued at £1,356,328 and the exports at £1,016,585. The staple articles exported are coffee, ground nuts, palm oil, rubber, ivory, gum, copal, and skins, while the chief imports are textiles, cheap spirits, guns, ammunition, etc. A railway connects Loanda with Ambacca (226 miles); this is now being extended to Malange. Other lines under construction are those from Mossamedes to Chella, and from Lobito Bay to a point to connect with the Central African Railway system. The province is connected by cable with the East, West, and South African telegraph system. There is a local post and telegraph service. The currency and weights and measures are the same as those of Portugal.

There is a tonnage due payable to the Government (through the Custom House) at each port in Angola as follows:—Ocean-going sailing vessels, 100 rs. per reg. ton; ocean-going steamers, 50 rs. per reg. ton; ocean-going steamers making regular calls, 20 rs. per reg. ton. Long distance coasting vessels, 8 rs. per reg. ton; short distance coasting vessels, 200 rs. per reg. ton, payable once in each year, counting from the date of the first payment.

AMBRIZ.

Ambriz is in lat. 7°55' S., long. 13°15' E. Climate unhealthy.

Imports.—Rum, planks, cloths, guns, swords, powder, and glass-ware.

Exports.—Coffee, rubber, and gum copal.

Accommodation.—It is an open anchorage, in about 6 to 7 fathoms of water, about 4 miles from the shore.

There is one Dutch and several Portuguese factories here.

Fresh water and provisions may be obtained.

Port Charges.—**Port Dues:**—From £3 to £4. **Sand Ballast:**—About 3s. 6d. per ton alongside. **Labour:**—Native, 1s. per man per day, and food.

Pro Forma Charges on a steamer of 2,504 tons at Ambriz:—

Angola—Ambriz (*continued*).

	Mil.	rs.
Permit	10	500
Doctor's visit	3	100
Harbour-master's fee	8	000
Checking cargo	1	000
Permit papers (clearing)	0	830
Tonnage dues at 20 reis	50	080
Custom papers and stamps for same	0	390
Slave permit	1	130
Requisition for same	0	100
Discharging lists, 2 at 70 reis each	0	140
Permit for cargo and stamps	1	380

76 580 = £17 0s. 4d.

AMBRIZETTE.

Ambrizette is in lat. 7°20' S., long. 12°50' E.

Exports.—Rubber and coffee.

Accommodation.—The anchorage is in 6 fathoms, sand and gravel, about 3 miles from the shore. There are two English and several Portuguese houses here.

Port Charges.—There are no dues, except harbour-master's fee, about 25s. **Boat Hire:**—Cheap. **Labour:**—Cheap.

Plenty of water and fresh provisions can be obtained.

BENGUELLA.

Benguella is in lat. 12°40' S., long. 13°25' E.

Population.—7,000.

Imports.—Cotton goods, tinned foods, etc.

Exports.—Rubber, wax, and gum.

Accommodation.—There is a depth here of from 4 to 6 fathoms. The anchorage is about 1½ miles from the town.

Practically all the trade of the port is done through Lisbon and in Portuguese bottoms.

For charges, see **Lobito Bay**.

KABINDA.

Kabinda in lat. 5°40' S., long. 12°12' E., is about 40 miles N. of the Congo.

Exports.—Rubber, palm oil, and palm kernels.

Accommodation.—The harbour is safe and commodious. The anchorage is in about 4 fathoms water, a mile off shore.

The rains are very heavy from the beginning of December to the middle of January.

There are English and Portuguese factories here.

Fresh water and provisions can be obtained.

Labour:—5*d.* per man per day.

LOBITO BAY.

Lobito Bay, in lat. 12°25' S., long. 13°13' E., is situated about 25 miles up the coast from Benguella. Climate healthy.

Exports.—Rubber, wax, gum, etc.

Accommodation.—This is an excellent natural harbour, well

Angola—Lobito Bay (*continued*).

protected, about 3 miles long by 1 to $1\frac{1}{2}$ miles broad, the mouth facing N. by N.E. being $\frac{3}{4}$ of a mile wide. It is formed by a sand-spit of from 150 to 400 yards wide. It is well buoyed, and vessels of any size can come alongside the railway pier at all tides.

Port Charges.—Tonnage Dues :—First port of call in Angola, 50 rs. per net reg. ton ; vessels with packet privileges, 20 rs. per net reg. ton. Subsequent calls, 8 rs. per net reg. ton ; vessels with packet privileges, 8 rs. per net reg. ton. **Bill of Health :—**3,100 rs. **Port Captain's Fees :—**8,000 rs. **Customs Dues :—**9,000 rs. **Customs Guard :—**400 rs. per day. **Stationery Charge :—**About 250 rs. **Guarantee :—**500 rs. **Permission for Loading :—**200 rs. **Stamps, etc :—**About 2,200 rs.

MANGUE GRANDE.

Mangue Grande is in lat. $6^{\circ}40'$ S., long. $12^{\circ}34'$ E.

Accommodation.—This is an open anchorage in 4 to 5 fathoms. There are no trading houses at this port.

MOSSAMEDES.

Mossamedes, in lat. $15^{\circ}20'$ S., long. $12^{\circ}12'$ E., is the most southern of the Portuguese settlements on the coast. Climate healthy.

Accommodation.—The anchorage is perfectly safe, and a good berth may be found in Mossamedes Bay, which lies between Ponto de Noronha and Giraul Point, in 5 to 7 fathoms. There is an iron pier with a depth alongside of about 10 ft.

A railway is in course of construction to connect Mossamedes with the country in the direction of Kunene River.

Harbour-master's Fees.—8,000 rs. Vegetables, $1\frac{1}{2}d.$ per lb.

ST. PAUL DE LOANDA.

St. Paul de Loanda is the capital of the Portuguese province of Angola. Lat. $9^{\circ}5'$ S., long. $13^{\circ}17'$ E. Distance by sea from Liverpool, 4,895 miles.

Population.—About 20,000.

Imports.—Cotton and woollen goods, spirits, guns, powder, earthenware, hardware, cattle, dried fish, coal, etc.

Exports.—Coffee, indiarubber, wax, gum, palm oil and kernels, cotton, orchilla, weed, and hides.

Accommodation.—There is good anchorage ground, in 7 to 15 fathoms of water, about $1\frac{1}{2}$ miles from the town. There is a floating dock, 196 ft. long, 49 ft. wide at the entrance, and with a lifting power of 1,300 tons. Repairs are executed.

The average quantity of coal or rough cargo discharged per day is 250 tons steamers and 45 tons sailing ships.

There are coal depots on Loanda Island and on the mainland. Discharging is done by means of lighters of from 15 to 60 tons capacity. There are three cranes, to lift from 4 to 10 tons each, on the Custom House quay. There are two staithes to ship coal at the rate of 20 tons per hour. One is on the island and the other on the mainland.

Time Signals.—Chronometers can be checked. A ball is hoisted halfway up a mast at the Observatory 10 minutes before the signal, and

Angola—St. Paul de Loanda (continued).

close up at 5 minutes before. The ball is dropped at 1 p.m. local mean time, equal to 24 h. 7 m. 6.7 s. Greenwich mean time.

Port Charges.—Tonnage Dues :—Steamers, 50 rs. per ton ; sailing vessels, 100 rs. per ton. Regular lines of steamers pay at first port in province, 20 rs. per ton and at each subsequent port 8 rs. **Portuguese Bill of Health :—**Steamers, compulsory, 3,100 rs. ; sailing vessels, compulsory if over 500 tons, 3,100 rs. ; under 500 tons, 1,900 rs. **Fees and Stamps :—**9,000 rs. **Sand Ballast :—**4s. per ton. **Labour :—**2s. 6d. to 3s. 6d. per day. **Water :—**2s. per ton on shore ; 6s. per ton delivered alongside. **Provisions :—**Beef, 10d. per lb. Fruit and vegetables are plentiful. Ship's stores dear ; vessels should be well found in everything. **Floating Docks Charges :—**For first 48 hours, £31 (minimum) ; for each 24 hours following, £7 16s.

Pro Forma Charges on a steamer bringing coal from South Wales, 2,400 tons net reg. :—

	£	s.	d.
*Custom House account	31	0	0
Harbour-master's fee, 8,000 rs.	1	12	0
British bill of health and attesting articles	0	12	6
Agency fee	10	10	0
Discharging 4,700 tons cargo at 1s. per ton	235	0	0
Winchmen	6	0	0
Telegrams, postages	3	0	0
Water, 20 tons at 6s.	6	0	0
	<hr/>		
	£293	14	6

* This includes tonnage dues, Portuguese bill of health, and fees and stamps.

CONGO COLONY.

The Congo Colony, known until 1908 as the Congo Free State, was in that year annexed by Belgium, and is now administered as a colony of that kingdom. It embraces an immense tract of land in the heart of Africa, including all that lying in the basin of the River Congo. It has a total area of about 909,650 square miles and a population estimated at 20,000,000. The Congo River is navigable from its mouth, at which stands the port of Banana, to Matadi, a distance of 110 miles. Between this point and Leopoldville (Stanley Pool) continuous navigation of the river is impossible owing to the number of cataracts (thirty-two falls and numerous rapids) which are encountered. In consequence of this a railway, 235 miles long, has been built connecting Matadi with Leopoldville. From the rail terminus the river is again navigable to Stanley Falls, a distance of some 1,200 miles. On this portion of the river (known as the Upper Congo) a State-maintained steamer service transports produce to the railway for conveyance to the ocean-going steamers at Matadi. The trade of the State is of considerable importance, having an annual value of $4\frac{1}{4}$ million pounds sterling, made up of imports valued at $1\frac{1}{4}$ millions and exports 3 millions. The chief products are rubber, coffee, copra, cocoa, ivory, palm nuts, and palm oil; and the principal imports, arms, ammunition, machinery, metals, drinks, food substances, tissues, clothing, ironware, and glassware.

The State is included in the Postal Union. The telegraph connects Boma with Leopoldville, Stanleyville, Ponthierville, and Uvira, the whole service having a total line length of 1,083 miles.

The currency in the coast districts and along the Lower Congo is the same as that of Belgium, viz., the franc of 100 centimes. Bank-notes of 10 and 100 francs circulate freely, but there is no gold coinage. On the Upper Congo the currency consists of brass rods.

BANANA.

Banana, in lat. $6^{\circ}0'$ S., long. $12^{\circ}23'$ E., is situated just N. of the mouth of the River Congo.

Exports.—Palm oil, palm kernels, etc.

Accommodation.—There is a depth of not less than 19 ft. of water on the bar, and of $3\frac{1}{2}$ fathoms off the repairing yard. There is no stock of coal kept here now, and the nearest coaling port is St. Paul de Loanda, about 190 miles further south.

Supplies are very bad, and no reliance should be placed on getting food (fresh) of any kind.

Port Charges.—**Port Dues**, including light dues and pilotage:—Vessels over 500 tons reg., 150 fr.; vessels under 500 tons reg., 10 fr.

Bill of Health:—Vessels over 500 tons reg., 25 fr.; under 500 tons reg., 10 fr. **Labour:**—Very scarce.

Congo Colony.

BOMA.

Boma, in lat. $5^{\circ}50'$ S., long. $13^{\circ}10'$ E., is 50 miles above Banana. It is the seat of Government of the Congo Colony.

Accommodation.—The river is navigable all the way from Banana. The greatest depth of water has been found in December off Fetish Rock, being 22 ft., and the lowest depth in July, being 16 ft. There are two piers belonging to the State which can be utilized (by permit) when the Antwerp mail is not in port.

Pilotage.—From Banana to Boma, and back, 100 fr. with a maximum of 4 days; for each extra day 30 fr.

Port Charges.—**Bill of Health** :—25 fr., but free if one is taken at Banana. **Navigation Dues** :—for vessels over 500 tons, 500 fr.; under 500 tons, 10 fr.

MATADI.

Matadi is about 81 miles from Banana, and is the furthest navigable point for steamers on the Lower Congo, being also the terminus of the railway which connects the Lower Congo with the High River (Stanley Pool).

Imports.—Cottons, hardware, provisions, beads and hosiery.

Exports.—Rubber and ivory.

Accommodation.—There is a minimum depth of 5 fathoms in the river between Boma and Matadi, and a very strong current. The Congo Railway Co. have two large piers at Matadi.

Pilotage.—Full pilotage, up and down the river, 150 fr. with a maximum of 6 days; for each extra day 30 fr. Pilotage from Boma to Matadi and back, 100 fr., with a maximum of 4 days; for each extra day 30 fr.

Port Charges.—**Bill of Health** :—25 fr. **Navigation Tax** :—Vessels up to 500 tons, 10 fr.; over 500 tons, 500 fr.

MUSSERA.

Mussera, in lat. $7^{\circ}33'$ S., long. $13^{\circ}1'$ E., is about 15 miles N. of Kinsembo.

Accommodation.—The anchorage is in 8 fathoms with the houses bearing S.E. to S.S.E. by S., 2 miles off the land. It is not safe to go further in. Cargo is brought off in surf-boats.

There are four French factories.

Provisions are scarce, and fresh water is difficult to obtain.

There are no charges.

NOKI.

Noki, or Noqui, is situated in the Portuguese basin of the Congo, about 74 miles from Banana.

Accommodation.—Vessels drawing up to 15 ft. can reach here at any season of the year. A pilot should be taken on account of the strong currents and whirlpools in the river.

Pilotage.—Same as Matadi. Native pilots can be obtained at San Antonio, at the mouth of the river, or at Banana, from the Congo staff of pilots.

Port Charges.—**Bill of Health** :—4,500 reis (about £1). **Clearance**, etc. :—About 13,500 reis (£3). **Provisions** are very scarce.

CONGO (FRENCH), THE.

The French Congo has an area of 670,000 square miles and an estimated population of about 12,000,000. The total trade is valued at about £1,200,000 per annum, the imports (£600,000) being chiefly cotton goods, hardware, and produce, and the exports (£800,000) cocoa, coffee, palm oil and kernels, kola nuts, ivory, timber, and rubber. The coast-line extends along the Atlantic between the Kāmerun Protectorate and the Congo Colony, the principal ports being Loango and Libreville. The Central African telegraph line connects Brazzaville, the capital, with Loango port, the latter being also connected with the British Atlantic Cable.

CAPE LOPEZ.

Cape Lopez, in lat. $0^{\circ}40'$ S., long. $8^{\circ}40'$ E., is about 60 miles S. of the River Gaboon.

Exports.—Rubber, red wood, ebony, palm oil, wax, gums, mahogany, and ivory.

Accommodation.—The anchorage is in 8 to 10 fathoms. Cargo is landed and shipped by vessel's own boats.

Fresh water is scarcely obtainable.

ELOBEY ISLES.

Elobey Isles are situated in Corsica Bay, just off the mouth of the River Muni.

Accommodation.—There are two or three factories on Small Elobey, where vessels occasionally load. There is anchorage in $3\frac{1}{2}$ or 5 fathoms.

There are no port charges. **Labour** :—2s. per day. **Fresh Water** :—1s. per cask. Fowls, 1s. each.

GABOON.

Gaboon is in lat. $0^{\circ}20'$ N., long. $9^{\circ}20'$ E.

Imports.—Cotton goods, dry goods, rum, and tobacco.

Exports.—Ivory, ebony and other woods, copal, palm kernels, rubber, etc.

Accommodation.—Vessels inside are well sheltered, and there is sufficient depth of water for the largest ships.

Bullocks, goats, and poultry can be obtained, but are dear. Fresh water is plentiful. There is a coal depot.

The unhealthy season is from December to March.

Ships arriving here should be well found in provisions.

Congo (French), The—Gaboon (*continued*).

Port Charges.—**Port Dues** :—7 per cent. on all produce shipped.
Anchorage Dues :—15 c. per net ton. **Light Dues** :—10 c. per net ton.
Loading and Discharging :—5 fr. per ton. **Sand Ballast** :—For cost of labourers. **Labour** :—Scarce.

There are heavy duties on foreign merchandise.

Pro Forma Charges on a steamer of 1,000 tons net :—

	Fr.	c.
Anchorage dues	150	00
Light dues	100	00
Doctor's visit	15	00
Passport, entering	3	00
„ leaving	3	00
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	271	00 = £10 15s. 1d.
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The unhealthy season is from December to March.

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Congo (French), The—Gaboon (*continued*).

Port Charges.—**Port Dues** :—7 per cent. on all produce shipped.
Anchorage Dues :—15 c. per net ton. **Light Dues** :—10 c. per net ton.
Loading and Discharging :—5 fr. per ton. **Sand Ballast** :—For cost of labourers. **Labour** :—Scarce.

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DAHOMEY.

Dahomey (French), lying between Togoland and Lagos, has an area of 41,000 square miles and a population of nearly 750,000. It has a coast-line of about 70 miles, the two chief ports being Kotonu and Porto Novo. The annual trade amounts to £770,000, and comprises imports £420,000 and exports £350,000. A railway connects the port of Kotonu with the interior. A telegraph and telephone service has been established. French and English coins circulate readily.

AGWEH.

Agweh, or Agoue, in lat. $6^{\circ}15'$ N., long. $1^{\circ}46'$ E., is about 6 miles E. of Little Popo.

Population.—About 20,000 (natives).

Imports.—Spirits and trade goods.

Exports.—Palm oil and kernels.

Accommodation.—Vessels anchor in 7 fathoms, bottom of sand and shells, about $\frac{3}{4}$ of a mile from the shore. Vessels anchor more to the W. when landing cargo, as they raft the rum in puncheons on shore. Fresh provisions can be obtained, including bullocks, sheep, and pigs, also vegetables and fruit. **Water:**—Good fresh water can be had on the beach at 4s. 6d. per puncheon of 150 gallons.

GRAND POPO.

Grand or Great Popo, in lat. $6^{\circ}15'$ N., long. $1^{\circ}50'$ E., lies 12 miles to the E. of Agweh, and is one of the most important towns on the coast.

Population.—2,000.

Imports.—Spirits and general hardware.

Exports.—Palm oil and kernels.

Accommodation.—The town is divided into two parts by the lagoon, the beach side being called "Grand Popo" and the mainland "Heavy." There is good anchorage in 7 fathoms at the extreme W. of the town. Care should be taken not to mistake Abannaké Beach town for this place, which is 3 miles to the W. During the rainy season, from July to October, the beach is bad for shipping of produce. Fresh provisions are not obtainable and water is very bad. Dunnage wood can be obtained in considerable quantities.

KOTONU.

Kotonu, in lat. $6^{\circ}20'$ N., long. $2^{\circ}25'$ E., is about 20 miles E. of Whydah.

Exports.—Palm oil, palm kernels, and maize.

Accommodation.—Kotonu, the principal seaport of Dahomey, is an open roadstead. There is a depth of 6 fathoms of water close to the shore, and good anchorage for steamers. The pier has excellent facilities for handling large cargoes.

The lagoon, visible from the roads, extends eastward to Lagos. The

Dahomey—Kotonu (*continued*).

European town consists principally of Government offices and dwellings, and there are a few trading establishments.

Telegraphic communication by cable with all parts, and telephonic communication with Porto Novo.

A duty of $12\frac{1}{2}$ per cent. ad val. is levied on general merchandise.

There are no port charges.

LITTLE POPO.

Little Popo, in lat. $6^{\circ}13'$ N., long. $1^{\circ}30'$ E., is about 8 miles E. of Porto Seguro.

Imports.—Spirits, cotton, salt, gunpowder, and general hardware.

Exports.—Palm oil and palm kernels.

Accommodation.—Good anchorage is to be had in 6 fathoms of water, sand and clay bottom, the best place being off the E. end of the town. The harbour is safe for eight months of the year, but from the middle of July to the end of October it is better to anchor further out, in 8 or 9 fathoms, on account of the heavy weather, and a second anchor should be ready in case of the roller-surge snapping the cable.

Port Charges.—There are no import dues. **Water:**— $2\frac{1}{2}$ dols. per puncheon of 150 gallons delivered alongside, but of very bad quality. Fresh provisions are scarce and dear.

PORTO NOVO.

Porto Novo, in lat. $6^{\circ}28'$ N., long. $2^{\circ}40'$ E., is the principal trading centre of Dahomey, and is situated on a lagoon 15 miles E. of Kotonu, and about 60 miles W. of Lagos.

Imports.—Cottons, spirits, tobacco, powder, etc.

Exports.—Palm oil, palm kernels, and maize.

Accommodation.—The average depth of the lagoon between Porto Novo and Lagos is 3 fathoms, except at one or two points, the principal one, Beshe Flat having only 6 ft. of water at low tide and 8 ft. at high tide.

Regular communication is established with Kotonu by "stern-wheelers" and shallow-draught lighters, the greatest draught being about 3 ft., and with Lagos by small steamers drawing not more than 7 ft. 9 in.

The imports are principally received via Kotonu, and exports are shipped via Lagos.

Telegraph and cable communication with all parts.

Port Dues:—Steamers, 1 fr. per net reg. ton.

WHYDAH.

Whydah, in lat. $6^{\circ}22'$ N., long. $2^{\circ}2'$ E., is about 13 miles E. of Grand Popo, and was formerly the principal seaport of Dahomey.

Imports.—Manufactured goods, powder, spirits, and tobacco.

Exports.—Palm oil, ivory, and palm kernels.

Accommodation.—This port is one of the most dangerous to land at on the west coast, as the breakers are infested with sharks.

British vessels entering for trade must on their arrival report the same

Dahomey—Whydah (*continued*).

by signal, when permission will be given for a boat to come ashore with the ship's papers. If in order pratique is immediately given and work may commence.

Vessels usually load about $1\frac{1}{2}$ miles off shore, in 8 fathoms water.

Water :—4s. 6d. per cask. **Fresh Provisions** can also be obtained here. Yams, 25s. per 100. **Labour** :—1s. 3d. per day.

A duty of $12\frac{1}{2}$ per cent. ad val. is levied on general merchandise.

GAMBIA.

Gambia, a West African British Colony and Protectorate, has a total area of 3,619 square miles and a population of about 140,000. The chief products and exports are ground-nuts, beeswax, india rubber, cotton, millet, hides, etc.; whilst the imports include cotton goods, rice, and kola nuts. The value of the trade of the Colony in 1907 was £675,080, made up of imports £341,060 and exports £334,020. Bathurst, the capital, standing on the Island of St. Mary at the mouth of the River Gambia, is connected with St. Vincent (Cape de Verde) and with Sierra Leone by cable, but there is no local telegraph or railway. The River Gambia is navigable to a point about 220 miles from the sea, indeed it is one of the few really satisfactory African rivers as regards navigability, there never being less than 26 ft. of water on the bar at extreme low tide.

There is a postal service. The legal currency is British, but French 5 franc pieces pass freely, the latter being accepted by the Government at 3s. 10½d. The rate of exchange for bills drawn on London during 1908 was 1 per cent.

BATHURST.

Bathurst, in lat. 13°21' N., long. 16°40' W., is situated on the S. bank of the Gambia.

Population.—8,800.

Imports.—Cotton goods, salt, rice, gunpowder, lumber, and hardware.

Exports.—Ground-nuts, beeswax, rubber, and hides.

Accommodation.—The holding ground is hard sand and mud. Vessels anchor close to the town in 7 to 14 fathoms water. The least depth of water in the channel leading to the anchorage is 25 ft. at low water. Tides rise 5 to 9 ft., according to the season. There is a Government pier and five private piers, which greatly facilitate the discharging and loading of cargo. The Government pier is 215 ft. long with 17 ft. alongside at low springs; the private piers have 5 ft. less.

The River Gambia is navigable for steamers drawing 18 ft. up to Kontour (130 miles), or drawing 12 ft. to McCarthy's Island (20 miles further). The work of dredging the Kai Hai Channel has been commenced, and when completed will, it is hoped, allow steamers drawing 16 ft. to proceed to McCarthy's Island. The principal loading ports in the river have wharves for steamers to go alongside.

Steamers load about 100 tons a day. Bathurst is connected with Europe by cable, via St. Vincent, Cape Verde, and also with the other West African Colonies, via Sierra Leone. There is no inland telegraph in the Colony.

Port Charges.—**Rates for Use of Government Wharf:**—Vessels over 2,000 tons, first day, £10; over 1,000 and not exceeding 2,000, first day, £5; over 500 and not exceeding 1,000, first day, £2 10s.; over 150 and not exceeding 500, £1 5s.; under 150, 10s.; for each subsequent day, half the above rates. **Buoyage Dues:**—5s. per foot draught in and

Gambia—Bathurst (*continued*).

out on all vessels other than mail steamers. **Sand Ballast** :—Free during August and September. **Water** :—Fresh water is scarce. **Provisions** :—Beef and fowls of an inferior quality may be obtained. Vegetables and fruit scarce. Steamer's expenses (loading in river, pilotage, buoyage, etc.) come out at about 1s. to 1s. 3d. per net reg. ton.

Pro Forma Charges on a steamer of 1,000 tons net reg. :—

	£	s.	d.
Buoyage in	3	0	0
Telegram	1	4	6
Trimmers	19	0	0
Rations to trimmers	5	10	0
Men on board	9	10	0
Rations to same	2	15	0
Telegram	1	1	0
Buoyage out	3	15	0
French bill of health	0	9	8
Customs fees (overtime)	2	0	0
River pilot	8	0	0
Endorsing articles	0	2	0

£56 7 2

GOLD COAST.

The Gold Coast is a British Colony on the W. coast of Africa lying between the French Ivory Coast and the German Protectorate, Togoland. The Colony, including Ashanti and the hinterland Protectorate, has a total area of 82,000 square miles and a population estimated at about $1\frac{1}{2}$ millions. During 1907 the total trade of the Colony was valued at £5,007,869; imports £2,366,195 and exports £2,641,674. The staple products and exports are palm oil, kernels, gold, monkey skins, ivory, cocoa, and india rubber. A considerable trade is also being developed in connection with the export of valuable native timber. The legal currency is British sterling, silver coins being legal tender up to any amount and bronze up to one shilling. French, Spanish and American gold coins are also legal tender at a fixed valuation as under:—

	Nominal Value.	Legal Value.
French—		£ s. d.
Napoleon	20 francs	.. 0 15 10
Spanish—		
Doubloon	16 dollars	.. 3 4 0
Half doubloon.	8 „	.. 1 12 0
American—		
Double eagle	20 dollars	.. 4 2 0
Eagle	10 „	.. 2 1 0
Half eagle	5 „	.. 1 0 6
Quarter eagle	2 „ 50 c.	.. 0 10 3

As in Nigeria the Cowrie currency is being superseded. The Bank of British West Africa, Ltd., has branches at Accra, Cape Coast, Sekondi, Axim, and Coomassie. There is a Government post, telegraph, and telephone service.

ACCRA.

Accra, in lat. $5^{\circ}30'$ N., long. $0^{\circ}20'$ W., is 70 miles E. of Cape Coast Castle. Distance by sea from Liverpool, 3,330 miles.

Population.—14,840.

Imports.—Cottons, earthenware, spirits, tinned provisions, etc.

Exports.—Gum, palm oil, kernels, rubber, and cocoa.

Accommodation.—The anchorage is in 6 to 7 fathoms, sandy bottom, $1\frac{1}{2}$ to 2 miles off shore. Considerable progress is being made with the construction of the breakwater, which so far even as it has been completed affords protection for landing and embarking in rough weather.

Telegraphic communication with Sierra Leone, Lagos, and England.

Water, cattle, small stock, fruit, vegetables, etc., can be obtained here.

Time Signals.—Chronometers can be checked. A flag is dropped and a gun fired at the Direct Co.'s Telegraph Office at 11 h. 0 m. 0 s. local mean time, equal to 11 h. 0 m. 46 s. Greenwich mean time. The signal is not exact.

ACHOWA.

Achowa, in lat. $4^{\circ}50'$ N., long. $1^{\circ}58'$ W., is situated a little to the W. of Dix Cove.

Gold Coast—Sekondi (*continued*).**Pilotage.**—Not necessary.**Port Charges.**—**Boat Hire** :—10s. 6d. per boat. **Light Dues** :—2s. per 25 tons or any part thereof, payable once in every 3 months. **Ballast** :—Sand, about £1 per ton. **Lighterage** :—5s. per ton (payable by shipper).**VOLTA.**

The mouth of the Volta River is in lat. 5°46' N., long. 0°41' E. (approximate). The town of Adda is situated about 2 miles to the W. of the mouth of the river, the Government officials' quarters, and the European trading firms are here.

Accommodation.—Vessels of 11 ft. draught can cross the bar, as there is 12 ft. on the W. entrance. Rise of tide, 3 ft. On the anchorage ground inside, there is 12 to 15 ft. water. The bar should only be attempted on the flood. From the buoy in 6 fathoms outside vessels should steer in north, to bring the sea aft. Vessels drawing 9 ft. may safely use the west entrance, but, as the bar is constantly shifting and changing its depth, a local pilot should be employed.

There is a bar steamer available for shipping and landing cargo, with a carrying capacity of 350 tons. The charges are 12s. 6d. per ton.

WINNEBAH.

Winnebah is in lat. 5°23' N., long. 0°35' W.

Population.—About 6,000.**Imports.**—Hardware, cottons, spirits, and provisions.**Exports.**—Cocoa, palm kernels, palm oil, rubber, and gum copal.

Accommodation.—There is no harbour or breakwater here, and vessels have to lie from 1½ to 2 miles from the shore. Owing to the shifting sands the depth of water varies considerably.

Port Charges.—**Clearance Fees** :—About 9s. 6d. **Boat Hire** :—Usually 9s. to 10s. the return trip. **Labour** :—Native, about 1s. 3d. per day.

GUINEA (FRENCH).

French Guinea occupies the coast line between Sierra Leone and Portuguese Guinea, and has an area of over 95,000 sq. miles, and a population of nearly two and a quarter millions. The port of Konakry, the capital, on the Isle of Tumbo, has in recent years acquired real importance, and is visited regularly by the steamers of one English, one German, and two French shipping companies. The chief exports are palm oil and kernels, ground nuts, rubber, and cattle. A road which brings the Upper Niger at Faranna into relation with the port of Konakry has been constructed behind the territory of Sierra Leone. A railway connecting the port with the Niger is also in course of construction. A good telegraph service has been established.

BOFFA.

Boffa, in lat. $13^{\circ}3' N.$, long. $14^{\circ}4' W.$, stands just within the entrance of the Pongo River, and is the principal town of the district.

Accommodation.—There are three bars at the entrance of the river; sand, mud, and common bar. The sand bar is the one most commonly used, and can be crossed by vessels drawing 14 ft. at flood tide. On the common bar there is only 12 ft. at high water, and a depth inside of from 4 to 6 fathoms. Vessels usually anchor outside in 3 fathoms, and send a boat in to procure a pilot at one of the factories. Shipmasters usually hire a few kroomen at Isles de Los, in order to load cargo.

Pilotage.—A vessel of 139 tons reg. paid £3 pilotage in and out.

Port Charges.—Labour:—The kroomen are paid 1s. per day and found in food, which consists of rice and salt fish. **Water:**—Fresh water can be obtained at Boffa or Isles de Los, and fruit and provisions can be obtained by bartering with the natives.

KONAKRY.

Konakry, or Conakry, is in lat. $9^{\circ}40' N.$, long. $13^{\circ}40' W.$, and is the principal town on Tumbo Island.

Accommodation.—There is anchorage in $3\frac{1}{2}$ to 4 fathoms, 7 cables' length from the shore. The tide rises 14 ft. at springs, and 7 ft. at neaps. There is a pier with a depth of 18 ft. of water alongside at low tide.

MELLACOREE.

Mellacoree, in lat. $9^{\circ}10' N.$, long. $13^{\circ}20' W.$, is situated at the head of the river of the same name, near the Isles de Los.

Accommodation.—At ordinary tides boats drawing more than 5 ft. cannot get up to the town of Mellacoree, but at flood tide there is sufficient depth for vessels drawing 15 ft. The navigation is intricate and a pilot is necessary. Vessels seldom arrive here with direct cargoes.

Pilotage.—5s. per foot, with meals. (The pilots are obtained at Sierra Leone.)

GUINEA (PORTUGUESE).

Portuguese Guinea lies on the north-western coast between Senegal and French Guinea, and includes the Bissagos Islands and the island of Bulama. The trade is of some importance, the chief products being rubber, oil, ivory, wax, hides, and skins.

BISSAO.

Bissao, in lat. $11^{\circ}52'$ N., long. $15^{\circ}53'$ W., is situated on the north bank of the river Jeba, about 25 miles south of Cacheo.

Exports.—Raw hides, wood, rice, gum, wax, ivory, etc.

Accommodation.—There is sufficient water here for the largest vessels, and the roadstead opposite the fort is well sheltered and perfectly safe. As the channel inwards is narrow and intricate, the lead should be kept constantly going, and the services of a pilot obtained if possible.

The interior navigation of the river is reserved to Portuguese vessels.

There is a lighthouse on the Island of Jatta.

Pilotage.—All merchant vessels are obliged to take a pilot to enter or leave the Channel of Jatta and of Arcas.

The following are the pilotage charges, either for steam or sailing vessels :—

Outwards from the Channel or inwards up to Bissao—

1 foot to 10 ft.	820 reis per foot.
Each foot above 10 ft. up to 15 ft.	550 " "
Each foot above 15 ft.	250 " "

Lighthouse Dues.— $4\frac{1}{2}$ milreis per vessel. **Import Duties.**—Levied on all goods and merchandise. **Provisions.**—Fresh meat, poultry, maize, and vegetables can be obtained in small quantities.

The harbour expenses on a steamer of 1,000 tons are about £15.

BULAMA.

Bulama, or Port Beaver, is in lat. $11^{\circ}30'$ N., long. $15^{\circ}30'$ W.

Accommodation.—There is sufficient water for the largest vessels. The harbour is easy to approach, the anchorage ground excellent, and the shelter perfect, as well as the facilities for landing.

Pilotage.—All merchant vessels are obliged to take a pilot to enter or leave the Channel of Jatta and of Arcas. The following are the pilotage charges, either for steam or sailing vessels :—

Outwards from the Channel and inwards to Bulama—

Up to 10 ft.	1,100 reis per foot.
Each foot above 10 ft. up to 15 ft.	700 " "
Each foot above 15 ft.	450 " "

Water may be procured from three springs on the S.W. corner of Biafares Island opposite.

CACHEO.

Cacheo, in lat. $12^{\circ}18'$ N., long. $16^{\circ}10'$ W., stands on the south bank of the river of the same name, about 20 miles above the entrance.

Accommodation.—There is 15 ft. on the bar at low water ; springs rise 8 ft., bottom soft mud. The anchorage off the fort is in 9 fathoms.

IVORY COAST.

The Ivory Coast (French), in the Gulf of Guinea, occupies the territory lying between Liberia and the Gold Coast Colony. It has an area of nearly 130,000 square miles, and a population variously estimated at from $1\frac{1}{4}$ to 2 millions. The coast is bordered by sand-bars shutting in marshy lagoons; the constant surf along the shore renders landing very difficult. The following are the names of the ports running from W. to E.: Port Blieren, at the mouth of the Cavally River; Tabu, Bereby, San Pedro, Drewin, Sassandra, Grand Lahou, Jackville or Half Jack, Grand Bassam, and Assinié. All these ports are open roadsteads, with deep water close in to the shore, but between Drewin and Tabu there are rocks that have to be avoided. The attempt to construct a canal through the lagoon to enable steamers to reach Bouet has been abandoned owing to the silting up of the sand, and the destruction of the wharf by a tidal wave. The railway material formerly landed at Port Bouet is now (1909) landed at Grand Bassam.

There are no light dues to be paid, although there are lighthouses at different points along the shore.

ASSINIÉ.

Assinié is in lat. $5^{\circ}12' N.$, long. $3^{\circ}15' W.$, at the extremity of a neck of land between the lagoon Aby and the sea.

Population.—3,500 natives, and 28 Europeans.

Imports.—Spirits, cotton goods, pearls, provisions, leaf tobacco, soap, rice, salt, machinery, etc.

Exports.—Caoutchouc, mahogany, etc.

Accommodation.—Assinié is an open roadstead. Vessels anchor in a depth of some hundreds of metres, and load and unload by means of boats belonging to the business houses. There is no wharf or railway connection.

There are no port charges.

GRAND BASSAM.

Grand Bassam, in lat. $5^{\circ}10' N.$, long. $3^{\circ}50' W.$, is the capital of the Colony, and is situated at the mouth of the River Course.

Population.—2,110.

Imports.—Cloth, rice, salt, provisions, wines and liqueurs, building material, machinery, hosiery, cotton goods, and silk.

Exports.—Rubber, cocoa, palm oil, palm kernels, mahogany, coffee, ivory, and gold dust.

Accommodation.—Grand Bassam is an open roadstead; there is a wharf 300 metres (983 ft.) long, built on iron pillars, capable of dealing with a maximum of 550 tons of cargo a day. The amount loaded or discharged, however, is entirely dependent on the state of the weather. New

Ivory Coast—Grand Bassam (*continued*).

sheds and storehouses are to be erected and a 10 ton crane added to the wharf equipment. At the end of the wharf, the depth of water is about 9 metres (29½ ft). The anchorage in the roadstead is good in 7 to 9 fathoms on a sandy bottom. There is sometimes, however, a strong current from the river Akba. Seven vessels can find good anchorage; the wharf is provided with four steam cranes. Cargo is loaded and discharged into surf boats, of which there are nineteen, vessels using their own tackle. Loading and unloading charges are at the expense of the shippers or consignees.

Pilotage.—The assistance of a pilot is not required.

Port Charges.—This is a free port, and vessels pay no dues unless they work on Sundays or on public holidays. In this event they pay a fixed charge of 25 fr. to the Customs service. **Ballast:**—Sand ballast may be had free at a charge of 6 to 7 fr. per ton for loading the same.

GRAND LAHOU.

Grand Lahou is in lat. 5°10' N., long. 5°0' W.

Population.—About 6,050.

Imports.—Cotton goods, salt, rice, provisions, gin, rum, and tobacco.

Exports.—Rubber, mahogany, palm oil, palm kernels, and gold dust.

Accommodation.—This is an open roadstead. Landing is done by means of surf-boats of about 2 tons carrying capacity. Goods may be landed from 6 a.m. till 12 noon, and from 2 p.m. till 6 p.m.; all boats must reach the shore before 6 p.m.

JACKVILLE.

Jackville, or Jacquville, is situated in lat. 5°12' N., long. 4°25' W.

Population.—3,000.

Imports.—Rice, biscuits, cotton and silk goods, rum, tobacco leaves, soaps, salt, etc.

Exports.—Palm oil and kernels.

Accommodation.—This is a safe harbour during bad weather, and has a depth varying from 20 metres (65½ ft.) at high water to 18 metres (59 ft.) at low water. There is no wharfage to be had, vessels loading and discharging from the beach. A small narrow-gauge railway exists from Jackville to the lagoon (5 kilometres=3½ miles); from there small steamers and barges transport all goods and products over the lagoon, principally to Aleidjean, where the railway line going to the interior ends.

Pilotage.—Nil.

Port Charges.—**Boat Hire:**—7 fr. 50 c. **Labour:**—For a workman, 25 fr. per month in cash, and 7 fr. in food in kind (rice and fish).

SASSANDRA.

Sassandra is in lat. 5°0' N., long. 6°5' W.

Population.—3,000.

Imports.—Cotton goods, hardware, rum, tobacco, gin, salt, etc.

Ivory Coast—Sassandra (*continued*).

Exports.—Rubber, palm oil, palm kernels, and mahogany.

Accommodation.—This is an open roadstead. There is a depth of 6 fathoms about half a mile from the shore. The anchorage is good, sandy bottom.

Port Charges.—Boat Hire :—10 fr. per ton. **Labour :**—About 1 fr. per day. Customs overtime, Sundays and holidays, 50 fr. per day ; half day or part thereof, 25 fr.

KAMERUN PROTECTORATE

This German Protectorate, lying between British Nigeria and the French Congo, has an estimated area of 191,130 square miles and a population of 3,500,000. The oversea trade amounts to considerably over one million pounds sterling per annum, the imports in 1907, of which the principal were Manchester goods, salt, metal wares, timber, spirits, and Colonial produce, being valued at £860,000, and the exports, palm oil and kernels, ivory, rubber, and cocoa, at £790,000. The means of inland communication are being rapidly extended; roads are being made between the coast towns and the up-country districts, and two railway lines, the Victoria-Lisoka and the Manenguba, are in course of construction. A telegraph cable connects the port of Duala with Bonny in Southern Nigeria.

DUALA.

Duala, in lat. $3^{\circ}55'$ N., long. $9^{\circ}45'$ E., is situated about 15 nautical miles from the mouth of the river and 23 nautical miles above the first buoy.

Accommodation.—The bar, one mile down the river from Duala, has a depth of $12\frac{1}{2}$ ft. at low water, and is marked by two buoys. The bottom of the river at the bar is soft mud. The current is as strong outside the bar as inside.

There is a floating dock here which can take ships up to 1,200 tons weight; it is 204 ft. long, 43 ft. wide at the entrance, and 14 ft. on the sill. The Government workshops are fitted up with modern machinery and implements, and all kinds of repairs can be executed, and all necessary equipment can be obtained.

Ships, entering the harbour, must keep the quarantine flag hoisted until a harbour official has been on board.

Pilotage.—Pilots are obtainable but not necessary, as the river is well buoyed. On request any officer of the Government's steamers, which are stationed at Duala, will do pilot's service.

Port Charges.—Towage.—There are several good steam launches stationed here which would undertake the towage of vessels if required.

Harbour Dues:—Vessels up to 599 tons, 50 mk.; from 600 up to 699 tons, 54 mk.; from 700 up to 799 tons, 63 mk.; and for each additional 100 tons, 9 mk. extra. These dues are only paid at Duala. **Quarantine Fees:**—20 mk. **Certificate of Health:**—9 mk.

Pro Forma Charges on a steamer of 4,624 tons:—

	Mk.	pt.
Clearance	20	00
Tonnage dues at 9 mk. per 100 tons	414	00
Certificate of health	9	00
Permission for Sunday work.	100	00

543 00 = £26 11s. 7d.

Kamerun Protectorate.

RIO DEL REY.

Rio del Rey, in lat. $4^{\circ}52'$ N., long. $8^{\circ}45'$ E., is situated on the river of the same name, 15 nautical miles up river from the mouth, and 27 nautical miles from the first buoy.

Exports.—Ebony, ivory, etc.

Accommodation.—The river is very well buoyed, and vessels can pass the same without pilot. The least depth on the bar at low water is 15 ft. The depth, after crossing the bar, about 5 miles off the entrance, increases to 3 fathoms.

Hogs, goats, yams, etc., can be obtained.

VICTORIA.

Victoria, an open sea harbour, in the Ambas Bay, can be entered by vessels of any draught and at any time. At night time two harbour lights, red and white, placed one after the other, mark the entrance into the bight between Ambas Island and Mondolah Island.

Good drinking water can be obtained in any quantity. It is brought alongside ships by means of lighters.

There are also the open sea harbours of Kribi, Longji, and Plantation, which are situated south of Duala.

LIBERIA.

The Republic of Liberia is situated on the west coast between Sierra Leone and the Ivory Coast. It has a total area of about 43,000 square miles and a population which is variously estimated at from 1,500,000 to 2,120,000. Liberia has about 350 miles of coast line. The trade of the Republic is of an annual value of about £300,000, the principal imports being Manchester goods, hardware, iron work, boots, clothing, and gin; and the exports cocoa, coffee, camwood, ginger, fibre, palm oil, kernels, rubber, etc. English money and weights and measures are in general use, although there is a Liberian coinage in silver and copper. These coins are:—Silver, 50, 25, and 10 cent pieces; copper, 2 and 1 cent pieces. There are no railways in the country, but a motor road has been recently opened for traffic. The river St. Paul is navigable for 25 miles from the sea northwards.

CAPE PALMAS.

Cape Palmas is in lat. $4^{\circ}25' N.$, long. $7^{\circ}35' W.$

Population.—1,500.

Imports.—Rice, fish, and cotton goods.

Exports.—Palm oil, palm kernels, piassava, ivory, and rubber.

Accommodation.—There is a depth at high water of 9 ft., and at low spring tides of from 3 to 4 ft. The anchorage is N.W. of the light-house, in 6 fathoms of water, mud bottom, about a mile from shore. There is a wharf here 71 ft. 8 in. long by 62 ft. 9 in. wide, with one bonded warehouse and two cranes. All merchants have their private landing wharves and warehouses.

Pilotage.—Not necessary.

Port Charges.—**Mooring:**—1 c. per cubic ft. **Entrance Fees:**—9 dols. **Clearance Fees:**—50 c. **Bill of Health:**—10s. **Tally Clerk:**—1 dol. 60 c. per day. **Tonnage Dues:**—12 c. per ton per annum, paid half-yearly. **Anchorage Dues:**—6 dols. per vessel.

Harper, an American settlement, is situated on the promontory forming the Cape.

GRAND BASSA.

Grand Bassa is in lat. $6^{\circ}0' N.$, long. $10^{\circ}0' W.$

Imports.—Manufactured goods, agricultural tools, etc.

Exports.—Palm oil, palm kernels, ivory, coffee, piassava, rubber, etc.

Accommodation.—The least depth on the bar is 6 ft. at low water; tides rise 4 ft. The anchorage is about a mile W. by S. of St. John River, in 6 to 7 fathoms, mud. In very fine weather vessels of 200 tons have crossed the bar.

Port Charges.—Steamers do not pay any anchorage dues, harbour dues, brokerage, pilotage, or towage. Sailing vessels under 50 tons pay 8s. 4d., and over 50 tons 12s. 6d. tonnage dues. There are the usual Customs charges for permits to load and discharge cargo after working hours, also an extra fee for working on Sundays and holidays.

Liberia.

GREENVILLE.

Greenville, in lat. $5^{\circ}10'$ N., long. $9^{\circ}6'$ W., is a Liberian settlement near the entrance of the Sinou River.

Accommodation.—Vessels anchor in 8 fathoms, sandy bottom, about a mile off the shore. There is only $4\frac{1}{2}$ ft. of water on the bar at low tide; springs rise $4\frac{1}{2}$ ft.

Port Charges.—For **Tonnage** and **Anchorage Dues**, see **Monrovia**.

MARSHALL.

Marshall, in lat. $6^{\circ}8'$ N., long. $10^{\circ}22'$ W., is a Liberian settlement situated on the W. bank of the Junk River, near the entrance.

Accommodation.—Vessels anchor in 7 fathoms, about 2 miles from the town. There is only 3 ft. of water on the bar at low water; springs rise 5 ft. Fresh water and provisions can be obtained.

Port Charges.—For **Tonnage** and **Anchorage Dues**, see **Monrovia**.

MONROVIA.

Monrovia, in lat. $6^{\circ}18'$ N., long. $10^{\circ}50'$ W., is the capital of Liberia, and is situated at the mouth of the river Mesurado, on the left bank.

Population.—2,000 Americo-Liberians; 5,000 aborigines.

Imports.—Manchester goods, gunpowder, tobacco, spirits, etc.

Exports.—Palm oil, camwood, ivory, cotton, etc.

Accommodation.—The anchorage is in 4 to 7 fathoms, about a mile from the town. At low water there is 4 ft. of water on the bar. Springs rise 6 ft. In the river there is 9 ft. of water.

Port Charges.—Foreign vessels arriving on the Liberian coast, and intending to trade with other ports of the Republic, enter at one of the ports of entry, and pay the customary import duty on their entire cargoes, upon which they obtain a general permit, and a license to trade and land their cargoes at any part of the coast designated. **Tonnage Dues** :—12 c. per ton per year, to be paid in half-yearly instalments of 6 c. each.

Anchorage Dues :—6 dols. per vessel.

ROBERTSPORT.

Robertsport, in lat. $6^{\circ}40'$ N., long. $11^{\circ}25'$ W., is near Cape Mount.

Accommodation.—The roadstead W. of the Cape is safe during the summer season, when vessels anchor in 6 to 9 fathoms, sandy bottom, but the usual anchorage is in 10 to 15 fathoms. Cape Mount River, a little to the N., has 7 ft. on the bar at low water, and 13 ft. at high water. Fresh water can be procured here.

Port Charges.—For **Tonnage** and **Anchorage Dues**, see **Monrovia**.

NIGERIA.

The British Colony and Protectorate of Nigeria embraces Northern and Southern Nigeria, and the old Colony and Protectorate of Lagos. It has an area of 362,170 square miles, and a population of about 13 millions. The principal ports are Akassa, Bonny, Brass, Burutu, Calabar, Degama, Egwanga, Forcados, Lagos, Opobo, Sapela, and Warri, whilst the Niger Company have recently opened several new trading stations on the river. The chief products are palm oil, kernels, rubber, cotton, cocoa, coffee, gum, copal, ivory, hides, maize, yams, cassava, plantains, earth-nuts, and fruits. The construction of light railways is doing much to open up the country, and the post, telegraph, and telephone systems are being gradually developed. British copper coins have been introduced with a view to abolishing the barter system, and a subsidiary nickel coinage has been issued in substitution for the cowries, brass rods, and manillas used by the natives.

BADAGRY.

Badagry, in lat. $6^{\circ}25'$ N., long. $2^{\circ}55'$ E., is about 18 miles E. of Porto Novo. It is the principal town of the western district of Lagos.

Exports.—Palm oil, palm kernels, and rubber; beniseed and maize (through Lagos).

Accommodation.—Vessels can anchor in 8 fathoms, mud and shells, about a mile N. by E. from a white cottage. A vessel of 9 ft. draught can reach the town.

Customs regulations same as at Lagos.

BONNY.

Bonny, in lat. $4^{\circ}28'$ N., long. $7^{\circ}10'$ E., is situated on the left bank of the river Bonny, six miles from the entrance. Distance by sea from Liverpool, 4,100 miles.

Population.—About 8,000.

Imports.—Manchester goods, guns, gunpowder, brass pans, crockery ware, hardware, etc.

Exports.—Palm oil, ivory, etc.

Accommodation.—The approaches to the river are kept well buoyed. The least depth of water on the bar is 19 ft. at low water, and vessels drawing from 12 to 18 ft. can reach the town at high water. Springs rise 6 ft., neaps 5 ft. Vessels anchor in the river, near the mail hulk, in 10 fathoms, mud bottom. The New Calabar River falls into the sea close to Bonny River, the two forming one embouchure.

Port Charges.—There are no port dues.

BRASS RIVER.

Brass River is in lat. $4^{\circ}18'$ N., long. $6^{\circ}13'$ E.

Imports.—Spirits, cotton goods, etc.

Exports.—Palm oil and kernels.

Nigeria—Brass River (continued).

Accommodation.—The best time to enter Brass River is at half-flood. Vessels drawing more than $14\frac{1}{2}$ ft. water must wait for the last of the flood, and if over 15 ft. draught they should not attempt it. At half-ebb, in the month of October, the tide was observed to run $5\frac{1}{2}$ knots in the entrance. Anchorage outside in 6 fathoms, about $4\frac{1}{2}$ miles from the entrance. There is a depth on the bar of 18 ft.

A white beacon is erected on the W. point of the mouth of the river.

Buoyage Dues:—See **Calabar**.

BURUTU.

Burutu is situated on the Forcados River, six miles above Forcados, and is included in that harbour.

Accommodation.—Steamers drawing 16 ft. can reach Burutu, and the Government of Northern Nigeria have established a dépôt for the reception of goods and passengers for up-river stations. The bar and channel to Burutu is kept well buoyed by the masters of Messrs. Elder, Dempster and Company's steamers. In the rainy season, from June to October, the upper river rises rapidly, and steamers drawing up to 13 ft. can reach as far as Lokoja, the headquarters of the Government of Northern Nigeria.

CALABAR.

Calabar (previously called Old Calabar) is in lat. $4^{\circ}56'$ N., long. $8^{\circ}27'$ E.

Imports.—Salt, powder, rum, and manufactures of all kinds.

Exports.—Palm oil, ivory, pod pepper, red wood, kernels, and ebony.

Accommodation.—This river can be entered by vessels drawing 21 ft. water, and ascended as far as Duke Town, about 25 miles from the sea. Vessels approaching should endeavour to make a large black can buoy, about 7 miles off the entrance, which is in lat. $4^{\circ}56'$ N., long. $8^{\circ}20'$ E. Pilots are not now necessary, as the river is well buoyed.

The most unhealthy months of the year are from November to May.

Port Charges.—Buoyage Dues:—

VESSELS.	TONNAGE.			
	2,000 and over.	1,000 and under 2,000.	500 and under 1,000.	Under 500.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
At first port	10 0 0	7 0 0	5 0 0	2 0 0
„ second port	5 0 0	3 10 0	2 10 0	1 10 0
„ third port	3 0 0	2 10 0	1 10 0	1 10 0

Vessels on which dues have been paid at one port are not, for a period of 2 months from the date of clearance, liable for any dues other than the additional dues leviable for calling at a second or third port, and no additional dues are payable for calling at any number of ports in excess of three within the aforesaid period of two months.

Nigeria.

FORCADOS.

Forcados is in lat. $5^{\circ}15' N.$, long. $5^{\circ}20' E.$

Population (town), about 2,000.

Imports.—Cotton goods, salt, building materials, hardware, tobacco, spirits, gunpowder.

Exports.—Palm oil, kernels, mahogany, rubber, cotton, shea nuts, shea butter, tin.

This entrance to the river is the best route of the whole delta to the Upper Niger (not excepting the Nun River), and also to the Warri Benin and Sapele.

The Custom House and Post Office are about 18 miles from the fairway on the left bank of the river (from its source).

A telegraph cable runs across the river from Custom House Point, and the direction is marked on the cable by two triangular beacons in one. Vessels must go above these to anchor before they are in the harbour; about 6 miles farther up, and included in the harbour of Forcados, is Burutu, a station of the Royal Niger Company, now the Niger Company Chartered and Limited.

Warri town is a sub-port and Government station 45 miles from the anchorage of Forcados River. A steamer drawing 19 ft. has reached here. Any steamer drawing 17 or 18 ft. can come down from Warri in five hours.

Sapele and Koko Town (a sub-port on Benin River) are accessible to steamers drawing 17–18 ft. Imports and exports same as Forcados.

Accommodation.—The depth of water on bar at low water springs is 16 ft., at high water 19 ft., and at high water neap tides 18 ft. There is a wharf at Forcados for Government cargo; a floating dry dock 217 ft. long over all, 54 ft. wide at the entrance at high spring level, and 18 ft. on the blocks at high springs, lifting power 2,700 tons; and engineering shops where repairs can be effected, also a Government repairing dockyard. A hauling slip is in course of construction.

The Government of Northern Nigeria have established a *dépôt* at Burutu for receiving goods and passengers; steamers drawing 16 ft. can go to Burutu. The bar and channel to Burutu is kept well buoyed by the Government. In the rainy season from June to October the upper river rises rapidly, and steamers drawing up to 13 ft. can reach as far as Lokoya, the Matadi headquarters of the Government of Northern Nigeria.

Pilotage.—Not compulsory.

Port Charges.—**Buoyage Dues** are charged on vessels according to tonnage and the number of protectorate ports at which they call—maximum, £10; minimum, £1 10s.

Medical Attendance.—Can be had in the river from the Government medical officer.

Custom House Fees.—Are charged on vessels working out of official hours or for entering and clearing out of official hours.

Entrance Fees:—14s. per hour. **Clearance Fees:**—14s. per hour.

Towage:—Not less than £20. **Ballast:**—Sand, 4s. per ton. **Labour:**—1s. per day per man. Average tonnage of vessels using port, 2,000 net register.

Nigeria.

LAGOS.

Lagos is in lat. $6^{\circ}25' N.$, long. $3^{\circ}25' E.$ Distance by sea from Liverpool, 4,097 miles.

Population.—About 42,000.

Imports.—Cotton goods, guns, gunpowder, hardware, rum, shooks, and tobacco.

Exports.—Beniseed, cotton, ivory, palm kernels, maize, palm oil, rubber, and mahogany.

Accommodation.—The bar shifts and the depth of water varies. There are heavy breakers. When there is a good safe bar, S is displayed from the masthead of the signal staff, and when there is a bad bar B is hoisted half-mast. Flag N is hoisted half-mast at commencement of rise of tide, and mast-headed at high water; it is hauled down when the tide begins to fall. When the bar is impassable F.R. is displayed at the mast-head. Sailing vessels are able to cross the bar drawing $11\frac{1}{2}$ ft. in, and 11 ft. out; and steamers 12 ft., both in and out. The anchorage is abreast of the town in 12 to 20 ft. of water. The anchorage outside the bar is in 6 fathoms water.

Pilotage.—Rates according to draught, 10s. per ft.; changing berth in harbour, 10s., and 2s. 6d. for each quarter of an hour after the first hour.

Port Charges.—**Towage**:—From outside bar into the river, £25, and the same out. **Light Dues**:—2s. 6d. for the first 25 tons, and 2s. for each subsequent 25 tons or part thereof (net register tonnage). **Hospital Fees**:—Europeans with salary of £300 and upwards, 10s. per day; under £300, 6s. per day; natives, 2s. per day. **Lighterage**:—7s. to 10s., according to agreement. **Wharfage**:—According to agreement, generally 3 dols. per day. **Customs Officer**:—While ship is discharging, 3s. per day and food.

NEW BENIN.

New Benin is situated at the mouth of Benin River, in lat. $5^{\circ}46' N.$, long. $5^{\circ}3' E.$

Exports.—Palm oil, palm kernels, and rubber.

Accommodation.—There is only 9 ft. of water on the bar, but there is a channel with 12 ft. at high water neap tides, and in a smooth sea, with a spring rise of about 4 ft., this gives 16 ft. at high water. Vessels drawing 11 and 12 ft. can cross the bar at high water spring tides. The anchorage in the roadstead is 3 miles outside the bar.

Pilotage.—Sailing vessels are towed over the bar by local steamers, charge about £40, the steamers supplying the hawser. The captains of these steamers are the best pilots.

NEW CALABAR.

New Calabar, in lat. $4^{\circ}28' N.$, long. $7^{\circ}10' E.$, is on the New Calabar River.

Accommodation.—Vessels of 11 to 12 ft. can enter the Two Fathom Channel. A black buoy, surmounted with staff and cage, is moored in 20 ft. at the W. entrance of the channel. There is 10 ft. of water at low spring tides. It is dangerous for boats of less than 24 ft. in length, and with less than four or six oars, to enter the river.

Nigeria.

NUN.

The Nun entrance to the river Niger, or Kwara, is in lat. $4^{\circ}20'$ N., long. $6^{\circ}4'$ E. The settlement of Akassa is about a mile inside the entrance, on the left bank.

Exports.—Palm oil and ivory.

Accommodation.—There is a depth of 18 ft. on the bar at half flood, and 21 ft. at full flood, but it is unsafe for vessels drawing more than $14\frac{1}{2}$ ft. to cross. Vessels also anchor off the town of Akassa in 7 fathoms. The depth inside is sufficient for vessels of any draught that can cross the bar, and the river is navigable for about 340 miles for vessels drawing 6 to 7 ft., and from the middle of August to the middle of October for vessels drawing 10 ft. The anchorage outside the bar is in 7 fathoms, 3 miles off.

OPOBO.

Opobo River lies 32 miles E. of the entrance to Bonny River.

Export.—Palm oil.

Accommodation.—Vessels drawing 10 ft. can enter at any time of the tide. Anchorage in 8 fathoms, stiff mud, off the factories. Sailing vessels drawing more than 12 ft. should not attempt to work out of the river. There is 9 ft. water on the bar; springs rise 7 ft., neaps $5\frac{1}{2}$ ft.

There are ten private wharves, all fitted with cranes, at which the lighters are unloaded.

SALT TOWN.

Salt Town is in lat. $5^{\circ}9'$ N., long. $5^{\circ}1'$ E.

Imports.—Rum, tobacco, and cotton goods.

Exports.—Palm oil and kernels and grain.

Accommodation.—Salt Town is an open roadstead, and vessels should not go inside 5 fathoms during the dry season, and 7 fathoms during the wet, which is from April until August. Wood is plentiful, but water is scarce and bad.

WARRI.

Warri is situated on the Warri River, 27 miles from Forcados.

Imports.—Cotton goods, hardware, and general merchandise.

Exports.—Palm oil and kernels.

Accommodation.—At high water there is a depth of over 40 ft., and of 12 to 18 ft. at low water.

Warri is not a port of entry, all dues being paid at Forcados, the port of entry.

Port Charges.—Custom House Fees:—For entrance and clearance in office hours, 2s. 6d. Out of office hours, 12s. 6d. extra. On Sundays, 30s. extra, and overtime to Customs officer on board. Medical attendance can be had in the river or from the mail steamers. All dues are paid at Forcados.

SENEGAL.

Senegal is the oldest of the French West African Colonies, and with its dependencies has a total area of 96,000 square miles, with a population of about 915,000. Of the ports of the Colony, Goree, Rufisque, and Dakar lie to the south of Cape Verde, and are connected with St. Louis at the mouth of the Senegal by a railway. There is a river service during the wet season on the Senegal (which, however, is closed to foreign flags) from St. Louis to Kayes (490 miles), a railway connecting from thence to the Niger. The staple articles of trade are palm oil, ground-nuts, and rubber, the chief imports being metal work, coal, cotton goods, and food-stuffs. A cable connects Dakar with Brest, whilst the inland telegraph service is highly developed. The Bank of West Africa affords banking facilities.

All port charges and tonnage dues have been abolished.

Cargo may be stored at all the ports in Government warehouses in the names of resident agents, no fees being payable until the goods are put up for sale or re-exported, one of which events must happen within the period of one year.

CARABANE.

Carabane (Casamance River), in lat. $12^{\circ}35'$ N., long. $16^{\circ}38'$ W., is situated on an island of the same name at the mouth of Casamance River.

Exports.—Wood, rice, and palm oil.

Accommodation.—The anchorage is in $4\frac{1}{2}$ to $5\frac{1}{2}$ fathoms off the town. The depth on the bar varies. The Casamance River is navigable for vessels as far as Ziguinchor. There are two channels, the northern one with a depth of about 3.50 metres ($11\frac{1}{2}$ ft.), and the other channel, which is fairly out in the open sea, with a depth of from 4.50 to 5 metres ($14\frac{3}{4}$ to $16\frac{1}{2}$ ft.). It is marked by a buoy. Vessels can steer from this buoy towards two others situated in about the middle of the river. Once the channel is passed the Casamance is entirely marked with beacons as far as Ziguinchor with landmarks indicating the banks.

Above the Carabane station, about 2 miles from the bar, at the mouth of the Casamance, there is a red light about 16 metres (52 ft.) high, which can be seen at a distance of nearly 6 miles.

Pilotage.—A pilot, paid by the Government, is stationed near the mouth of the northern channel.

DAKAR.

Dakar is in lat. $14^{\circ}40'$ N., long. $17^{\circ}35'$ W.

Population.—18,500.

Imports.—Cotton, woollen and silk textiles, rice, sugar, salt, tobacco, metals, hardware, powders, wood, alcohol, wines, etc.

Exports.—Pea-nuts, gum, indiarubber, almonds, elephant tusks, raw wax, birds' skins, bullocks' skins, dried fish, bullocks, sheep, and honey.

Accommodation.—Dakar is one of the most important ports on the West African coast, and vessels of the largest tonnage can at all times

Nigeria.

NUN.

The Nun entrance to the river Niger, or Kwara, is in lat. $4^{\circ}20'$ N., long. $6^{\circ}4'$ E. The settlement of Akassa is about a mile inside the entrance, on the left bank.

Exports.—Palm oil and ivory.

Accommodation.—There is a depth of 18 ft. on the bar at half flood, and 21 ft. at full flood, but it is unsafe for vessels drawing more than $14\frac{1}{2}$ ft. to cross. Vessels also anchor off the town of Akassa in 7 fathoms. The depth inside is sufficient for vessels of any draught that can cross the bar, and the river is navigable for about 340 miles for vessels drawing 6 to 7 ft., and from the middle of August to the middle of October for vessels drawing 10 ft. The anchorage outside the bar is in 7 fathoms, 3 miles off.

OPOBO.

Opobo River lies 32 miles E. of the entrance to Bonny River.

Export.—Palm oil.

Accommodation.—Vessels drawing 10 ft. can enter at any time of the tide. Anchorage in 8 fathoms, stiff mud, off the factories. Sailing vessels drawing more than 12 ft. should not attempt to work out of the river. There is 9 ft. water on the bar; springs rise 7 ft., neaps $5\frac{1}{2}$ ft.

There are ten private wharves, all fitted with cranes, at which the lighters are unloaded.

SALT TOWN.

Salt Town is in lat. $5^{\circ}9'$ N., long. $5^{\circ}1'$ E.

Imports.—Rum, tobacco, and cotton goods.

Exports.—Palm oil and kernels and grain.

Accommodation.—Salt Town is an open roadstead, and vessels should not go inside 5 fathoms during the dry season, and 7 fathoms during the wet, which is from April until August. Wood is plentiful, but water is scarce and bad.

WARRI.

Warri is situated on the Warri River, 27 miles from Forcados.

Imports.—Cotton goods, hardware, and general merchandise.

Exports.—Palm oil and kernels.

Accommodation.—At high water there is a depth of over 40 ft., and of 12 to 18 ft. at low water.

Warri is not a port of entry, all dues being paid at Forcados, the port of entry.

Port Charges.—Custom House Fees:—For entrance and clearance in office hours, 2s. 6d. Out of office hours, 12s. 6d. extra. On Sundays, 30s. extra, and overtime to Customs officer on board. Medical attendance can be had in the river or from the mail steamers. All dues are paid at Forcados.

SENEGAL.

Senegal is the oldest of the French West African Colonies, and with its dependencies has a total area of 96,000 square miles, with a population of about 915,000. Of the ports of the Colony, Goree, Rufisque, and Dakar lie to the south of Cape Verde, and are connected with St. Louis at the mouth of the Senegal by a railway. There is a river service during the wet season on the Senegal (which, however, is closed to foreign flags) from St. Louis to Kayes (490 miles), a railway connecting from thence to the Niger. The staple articles of trade are palm oil, ground-nuts, and rubber, the chief imports being metal work, coal, cotton goods, and food-stuffs. A cable connects Dakar with Brest, whilst the inland telegraph service is highly developed. The Bank of West Africa affords banking facilities.

All port charges and tonnage dues have been abolished.

Cargo may be stored at all the ports in Government warehouses in the names of resident agents, no fees being payable until the goods are put up for sale or re-exported, one of which events must happen within the period of one year.

CARABANE.

Carabane (Casamance River), in lat. $12^{\circ}35'$ N., long. $16^{\circ}38'$ W., is situated on an island of the same name at the mouth of Casamance River.

Exports.—Wood, rice, and palm oil.

Accommodation.—The anchorage is in $4\frac{1}{2}$ to $5\frac{1}{2}$ fathoms off the town. The depth on the bar varies. The Casamance River is navigable for vessels as far as Ziguinchor. There are two channels, the northern one with a depth of about 3.50 metres ($11\frac{1}{2}$ ft.), and the other channel, which is fairly out in the open sea, with a depth of from 4.50 to 5 metres ($14\frac{3}{4}$ to $16\frac{1}{2}$ ft.). It is marked by a buoy. Vessels can steer from this buoy towards two others situated in about the middle of the river. Once the channel is passed the Casamance is entirely marked with beacons as far as Ziguinchor with landmarks indicating the banks.

Above the Carabane station, about 2 miles from the bar, at the mouth of the Casamance, there is a red light about 16 metres (52 ft.) high, which can be seen at a distance of nearly 6 miles.

Pilotage.—A pilot, paid by the Government, is stationed near the mouth of the northern channel.

DAKAR.

Dakar is in lat. $14^{\circ}40'$ N., long. $17^{\circ}35'$ W.

Population.—18,500.

Imports.—Cotton, woollen and silk textiles, rice, sugar, salt, tobacco, metals, hardware, powders, wood, alcohol, wines, etc.

Exports.—Pea-nuts, gum, indiarubber, almonds, elephant tusks, raw wax, birds' skins, bullocks' skins, dried fish, bullocks, sheep, and honey.

Accommodation.—Dakar is one of the most important ports on the West African coast, and vessels of the largest tonnage can at all times

Senegal—Dakar (*continued*).

find good anchorage here. The roadstead is very easy of access, and the entrance to the channel is indicated by two lights (red larboard and green starboard side) placed on posts about 5 metres (16 ft.) above low water mark. These lights are visible at about 2 miles distant.

Vessels drawing 8·50 metres (27½ ft.) can land in the first wet dock, and in the other parts, drawing 6·50 metres (21 ft.). The total length of the quays amounts to 2,200 metres (7,210 ft.), and storehouses provided with lifting apparatus of all capacities have been erected on the quays. The naval port which joins the commercial port has a slipway with a lifting power of 200 tons. A large dry dock is under construction, but is not yet (1908) finished. The workshops of the Navy also undertake repairs.

The port is connected with the Dakar St. Louis Railway by a line which runs along the entire length of the moles.

All kinds of provisions are plentiful, and water, fresh meat, flour, poultry, wine, fresh vegetables, ice, etc., can be obtained. Fresh water can be distributed to vessels at the rate of 30 to 50 tons per hour.

The natives work on board vessels, and about 10 tons per hour can be loaded or discharged.

Large stock of coal is kept, and vessels can supply themselves at prices varying from 30 to 40 fr. per ton delivered on board.

Time Signals.—Chronometers can be checked. A cylinder is hoisted on a mast near the Barracks on Dakar Point 2 minutes before the signal, and dropped at 10 h. 0 m. 0 s. a.m. Dakar mean time, equal to 23 h. 9 m. 42·3 s. Greenwich mean time. A gun is also fired. The signal is repeated 2 minutes later.

Pilotage.—Compulsory. Pilots conduct vessels from the open sea to the quay. The dues are levied per ton entering and leaving :—Sailers, 8 c. per ton measurement; maximum, 200 fr.; minimum, 20 fr. Steamers, 4 c. per ton measurement; maximum, 100 fr.; minimum, 10 fr. No pilotage dues are levied on steamers under 100 tons measurement, or sailers under 80 tons measurement.

Port Charges.—No dues are levied on vessels or on cargoes. From 6 a.m. till 6 p.m. vessels are reported free of charge; at night a charge of about 30 fr. is made, according to the tonnage of the vessel.

GOREE.

Goree, in lat. 14°38' N., long. 17°28' W., is 1¼ miles from Dakar.

Population.—1,560.

Accommodation.—The roadstead is safe from November 1 to July 1. From July to October there are dangerous squalls from the S.E. Repairs are executed.

This is a free port.

KAOLACK.

The River Saloum has quite recently been marked with buoys, and vessels can go up as far as Kaolack.

KAYES.

Kayes is in lat. 14°20' N., long. 11°30' W.

Senegal—Kayes (*continued*).

Accommodation.—The River Senegal is entirely marked with buoys, and from August 1 to the end of September vessels with a draught of water of from 4·80 metres (15½ ft.) to 5 metres (16 ft. 4 in.) can go up as far as Kayes, which is about 499 miles from St. Louis. Holds for discharging and anchoring stations have been put up along the river across the town, and the railway from Decauville connects them with the town. A branch-line of the Kayes-Niger Railway is also connected with the holds. Heavy loads can be discharged along the bank by means of wagons carried on floats.

Provisions are easily obtainable.

PORTENDICK.

Portendick is in lat. 18°8' N., long. 16°8' W.

Accommodation.—This is an open roadstead. The anchorage is in 4 fathoms, about a quarter of a mile off shore. It is frequented by vessels in the gum trade.

Fish are plentiful, but no supplies can be obtained.

RUFISQUE.

Rufisque, in lat. 14°45' N., long. 17°10' W., is about 8 miles E. of Dakar.

Population.—12,500.

Imports.—Colonial goods, rice, sugar, wine, oil, cloth, etc.

Exports.—Ground-nuts, rubber, and cotton.

Accommodation.—The anchorage, in 3½ to 7 fathoms, is good for nine months, but from July to October there is a heavy swell with S. and W.S.W. winds. There are two wharves with a metal bridge 200 metres (650 ft.) in length, which facilitates loading and discharging operations. The construction of a third wharf is shortly to be commenced.

A fixed red light is placed in the tower situated 80' S.W. of the town. It is 16 metres (52½ ft.) above sea level, and can be seen at 3 miles distance.

ST. LOUIS.

St. Louis, in lat. 16°5' N., long. 16°30' W., the capital of the Colony, is situated on an island about 9 miles from the mouth of the River Senegal. Iron bridges with revolving trusses connect it with the mainland.

Population.—24,000.

Imports.—Cotton, woollen and silk materials, rice, sugar, tobacco, metals, hardware, and powder.

Exports.—Pea-nuts, skins, gum, indiarubber, ivory, feathers, birds, and gold.

Accommodation.—Vessels drawing from 2·80 metres (9 ft.) to 3·20 metres (10½ ft.), can cross the bar, and proceed up to St. Louis. They generally discharge part of their cargo at Dakar or Rufisque before proceeding to St. Louis. There is a daily notification at the Post Office of these two ports, concerning the depth of water on the bar at St. Louis. At the mouth of the river signals are displayed, a blue checked flag if the bar is bad, a red and white checked flag with the colours arranged diagonally if it is good. When these two flags are hoisted together with the red and

Senegal—St. Louis (*continued*).

white on top a vessel may enter ; when together, with the blue on top she can leave. The bar is generally bad to cross, owing to rapid currents, from November to April. On arrival off St. Louis vessels anchor on either side of the bridge at about 40 to 50 metres (130 to 163 ft.) from the quay, with a strong stream anchor out in order to prevent being carried on to the quay by east winds, which blow very strongly during the early part of the day during the summer. Discharging and loading is carried on by means of stages. Vessels can, if desired, moor in the middle of the river at some distance from the quay ; here the holding is good. Provisions are plentiful and moderate in price. Small repairs can be effected.

Pilotage.—Compulsory. Rate from the roadstead outside the bar to the roadstead of St. Louis below the Faidherbe Bridge, or vice versa : All steamers up to 100 tons net reg., 60 c. per ton ; vessels over 100 tons, 75 c. per ton for the first 100 tons and 50 c. per ton for every additional ton. For every movement in the St. Louis roadstead where the services of a pilot are taken, 5 fr. Sailing vessels pay one-quarter above these rates. Steamers not proceeding under their own steam are rated as sailers.

Towage :—At sea, as per agreement. Across the bar, 2 fr. per ton net reg. From bar to St. Louis, and vice versa, 1 fr. per ton net reg. Hawsters to be supplied by vessel ; if provided by tug an additional 50 fr. per hawser is charged.

Port Charges.—All port dues and anchorage charges in French West African ports were abolished as and from July 1, 1908. **Provisions :**—Bread, 60 c. per kilo. ; beef, 1 fr. per kilo. ; mutton, 2 fr. per kilo. ; others, such as flour, wine, poultry, etc., in proportion. **Labour :**—Carpenter's wages executing repairs, 4 to 5 fr. per day.

SIERRA LEONE.

Sierra Leone, a British Colony in West Africa, lies between French Guinea and the negro Republic of Liberia. It extends from the Scarcies River on the north to the border of Liberia on the south, and includes the Yellaboi group of islands on the north coast, and Sherbro and a number of smaller islands to the south. The Isles de Los no longer belong to the Colony, having been ceded to France in 1904. The Colony has a total area of about 4,000 miles, with a population of 76,929. The chief imports are cotton goods, rice, spirits, etc., and the exports palm oil and kernels, ginger, rice, indiarubber, and ground and kola nuts. A light railway, gauge 2 ft. 6 in., runs from Freetown to Baiima, a distance of $226\frac{1}{2}$ miles, and the Government are spending a sum of $1\frac{1}{2}$ millions on port works and railway extension. The River Rokel is navigable for 40 miles from the sea and the Sherbro River for about 20 miles.

There is a postal and telegraph service and a telephone service at Freetown; this latter, however, is the property of the Government, and is not yet available for public use. The currency is British sterling.

FREETOWN.

Freetown is in lat. $8^{\circ}30'$ N., long. $13^{\circ}15'$ W. Distance by sea from Liverpool, 2,962 miles.

Population.—37,280.

Imports.—Cotton goods, gunpowder, flour, kerosene oil, clothing, hardware, haberdashery, provisions, lumber, rum, gin, and tobacco.

Exports.—Gold, ground-nuts, copal, palm oil, palm nuts, ginger, hides, ivory, rice, beniseed, kola nuts, camwood, and indiarubber.

Accommodation.—The anchorage is in 6 to 16 fathoms in the outer harbour, abreast the Government wharf. Two steel jetties have been recently constructed in connection with this wharf. These jetties have been erected in order to facilitate the loading and unloading of the lighters which ply between the steamers and the shore, and generally to expedite the receiving and shipping of cargo. The jetties, which are situated just opposite the Customs sheds, are 100 ft. long, 31 ft. broad, and have a depth at their seaward ends of nearly 40 ft. at low water spring tides. Each jetty is fitted with a 4 ton steam crane for loading and discharging lighters. All vessels with gunpowder on board for this port are required to proceed direct to the powder ground (anchorage 8 fathoms) before breaking bulk or discharging other cargo; if the gunpowder is for ports further down the coast, and stowed in approved magazines, vessels proceed to ordinary anchorage.

The sickly or rainy season is from May to October.

Ships are often chartered to load between Nunez and Sherbro. The Rivers Ponga, Foreecarreeh, Mellacoree, and Scarcies are often included in the charters. The entrance to Foreecarreeh River has only 1 fathom at low springs; springs rise 11 ft.

Masters neglecting to produce the bill of health, certificate of registry

Sierra Leone—Freetown (*continued*).

and correct manifest of cargo, will be liable to a penalty of £100, or six months' imprisonment.

Pilotage.—There is no fixed scale ; pilots invariably charge a lump sum to pilot a vessel in and out of each river, according to the draught of vessel, and in addition their passage back to the place whence they were engaged, whether Isles de Los or Freetown.

Port Charges.—Light Dues :—3*d.* per net ton (light not reliable).

Harbour Dues :—Vessels over 400 tons, £5. **Landing Clerk :—**3*s.* per day.

Hire of Lighter :—With two men, 20*s.* per day.

SHERBRO.

Sherbro is in lat. 7°30' N., long. 12°50' W., about 80 miles from Sierra Leone.

Exports.—Palm nuts and oil.

Accommodation.—The principal loading places are York Island, Victoria, Bonthe, Bendo, and a small place about 4 miles S. of Bonthe. Vessels drawing 15 ft. can go from York Island to Bendo ; those of 13 ft. draught can cross from Bendo to Victoria. The mail steamers drawing 19 ft. even keel navigate the Sherbro River at springs ; 18 ft. is a safe draught in rainy seasons, 17 ft. 6 in. in dry seasons.

Cargo can be loaded by large crafts up to 400 tons per day.

Pilotage.—Pilots and kroomen are obtained and left at Freetown. Return pilotage from Sierra Leone to Sherbro and back, £5. Kroomen, 1*s.* per day and food.

Port Charges.—Light Dues :—3*d.* per reg. ton. **Harbour Dues :—**£5 for vessels over 400 tons. **Medical Visit** (if required) :—£3 4*s.* **Dunnage Mats :—**1*s.* each. Vessels coming from Isles de Los or Sierra Leone do not pay any port charges.

Good provisions and water can be obtained.

TOGOLAND.

Togoland, a German colony, on the Slave Coast, has an area of about 33,700 square miles and a population estimated at 1,000,288, of whom only 288 are Europeans. The total trade amounts to a little over £629,700 per annum, the imports (£334,000) including cotton, iron and iron wares, tobacco, timber, spirits, and colonial produce, and the exports (£295,700), palm oil and kernels, cotton, rubber, and maize.

Good roads and two railways connect Lome, the chief port, with the interior. The colony, being in telegraphic communication with Gold Coast Colony and Dahomey, is in direct touch with Europe by two cables.

PORTO SEGURO.

Porto Seguro, in lat. $6^{\circ}12'$ N., long. $1^{\circ}30'$ W., lies about 30 miles E. of Jella Koffi.

Exports.—Palm oil, cotton, palm kernels, ground-nuts, and beniseed.

Accommodation.—The large lagoons which lie behind the town give easy carriage for the produce from the interior. The breakers on the beach here are very heavy at times, and it is impossible to land with ship's boats. There are several large factories here which are supplied with surf-boats, but in the months of August, September, and October, it is frequently impossible to cross the bar for days together.

ISLANDS.

ASCENSION.

Ascension, in lat. $7^{\circ}55'$ S., long. $14^{\circ}20'$ W., is a solitary oceanic island situated in the South Atlantic about 1,000 miles distant from Cape Palmas, the nearest point on the African mainland. It is entirely under the control of the British Admiralty, the population consisting of officers, seamen, and marines with their families, and a few kroomen.

Georgetown, the only harbour, is on the north-west coast, the anchorage being in Sandy or Clarence Bay. Ships can anchor in any part of the bay in moderate depths of water, but only put in when compelled to do so for provisions and water. Unless unavoidable, these supplies should be procured at St. Helena, as the authorities have recently received instructions to limit the issue of water to a quantity that will afford each man on board a gallon a day for the passage to Pernambuco, which will occupy about 10 days. There is a 4 ton hand crane and a 10 ton sheers.

Port Charges.—**Port Dues** :—Merchant vessels, British, Colonial, or Foreign, arriving at the island for any purpose whatever (except on Government service), $1\frac{1}{2}d.$ per reg. ton; every cask, case, or package, shipped from the island on board a merchant vessel, 1s. **Charge for Use of Admiralty Hoist.**—For every ton or part of a ton raised or lowered for any merchant vessel, 5s. **Health Officer's Fee** :—7s. 6d. **Certificate of Clearance** :—2s. 6d. **Lighterage** :—For use of lighter per day or part of day, 15s.; boat one day, 10s.; part of day, 5s.; steamboat, per hour or part of hour, 11s. **Ballast** :—Stone, 5s. per ton; sand, 4s. per ton. **Water** :—8s. 4d. per ton.

A minimum of 10 per cent. is charged on all island produce, and a minimum of 25 per cent. is charged on all stores and provisions sent from England supplied to vessels in actual distress through unavoidable misfortune, which percentage may be increased at the discretion of the Commandant to even 100 per cent. when the necessity for applying for supplies might have been avoided.

Climate healthy. Distance from Liverpool by sea, 3,833 miles.

CANARY ISLANDS.

The Canary Archipelago, which for administrative purposes ranks as a province of Spain, is situated between latitudes 27° to 30° N., longitudes 13° to 18° W. The islands have a total population of 358,564, distributed as follows : Teneriffe, 138,008 ; Grand Canary, 127,471 ; La Palma, 41,994 ; Lanzarote, 17,546 ; Gomera, 15,358 ; Fuerteventura, 11,679 ; Hierro, 6,508. The principal imports are coal and general merchandise, and the exports fruit, vegetables, wine, onion seed, cochineal, and "Calado" work. The lease of the free port rents having expired, the Spanish Government has taken over the administration of the Customs, and is receiving the import duties. The charges on shipping are now trifling.

All the islands are mountainous and bold, visible from 40 to 50 miles off, and may be approached with confidence, even at night. Several of the northern points of the islands are well lighted, so that ships bound south can stand through in safety, there being no unseen dangers within a mile of the shore. An occasional haze prevails at midday, which prevents the islands being seen until within about 20 miles. Lights have also been placed on the most southern points of Teneriffe and Grand Canary. The trade wind, N.N.E. to E., prevails nine months of the year ; during the other three months S. and S.E. winds prevail, but seldom with violence. N.W. winds blow in heavy gusts off the hills, and vessels lying in the roads off Santa Cruz ought to take special precautions to prevent driving to sea, as the anchorage ground is deep, and vessels sometimes drag their anchors.

Vessels passing between the islands should not approach within 4 or 5 miles of the weather side, as the high land causes the wind to fall off, and, as there is a heavy ground swell, a vessel might be drifted on shore.

Calms and baffling winds are often met with 20 to 30 miles off, on the lee side of all the islands. In approaching the Canaries from the N. it should be borne in mind that there is a strong surface current running to the W.S.W., between Madeira and the Canaries.

Quarantine is strictly kept on vessels arriving from unhealthy or suspected places.

All the ports are open anchorages, from $\frac{1}{4}$ to 1 mile from shore ; during the day a fresh trade wind blows in shore, and at night light winds and calms. All goods are taken from and brought alongside at merchant's risk and expense.

Pilots go off to meet all steamers entering the ports. Strangers arriving during the night should lay-to about 6 or 8 miles to windward of their port, so that, by steering in towards the anchorage at daylight, a pilot will be met coming off.

The anchorage being all in deep water—15 to 25 fathoms—a good supply of cable should be kept in readiness.

The Salvage and Great Piton Islands lie in the course between Madeira and Teneriffe ; the former are visible 30 miles off, whilst the latter are low and surrounded by reefs. The best track is considered to be on the E. side of the Great Salvage.

Canary Islands.

CABRAS.

Cabras is the principal port in the island of Fuerteventura, lat. $28^{\circ}30'$ N., long. $14^{\circ}5'$ W.

Population.—About 1,100.

Accommodation.—The bay is well sheltered from winds from the S.W. to N. by W., but open to those from S.E. to N.E. There is plenty of water for the largest vessels, the depth diminishing gradually from 90 to $4\frac{1}{2}$ fathoms, close to the shore.

LANZAROTE ISLAND.

Lanzarote is an island in lat. $29^{\circ}0'$ N., long. $13^{\circ}45'$ W.

Population.—17,546.

Exports.—Barilla, cochineal, orchilla, onions, wines, etc.

Accommodation.—Port Naos is situated on the east side of Lanzarote Island, and forms the principal harbour for the town of Arrecife, a little to the south. It affords good and safe anchorage except in strong E., S.E., and S. winds. A new harbour, situated on the S.E. of Lanzarote, opposite the S. of Arrecife, is now in course of construction.

There are two bars, the eastern has 21 ft. of water at high spring tides, and $9\frac{1}{2}$ ft. at low water; neap tides, 15 to $10\frac{1}{2}$ ft. On the southern bar the depth is about a foot less. The depth of water inside the harbour is from 25 to 30 ft. Rise and fall at spring tides, 11 to 12 ft.; neaps, 4 to $4\frac{1}{2}$ ft.

There is a good anchorage to the S., or opposite the S.W. side of Arrecife, where vessels making a short stay generally anchor from the beginning of April, and even earlier, to August or September. It is in 7 to 8 fathoms of water, close in, deepening a little off the shore to 25 fathoms.

There are three moles, but only accessible to lighters—one at any time, and the other two only at high tide. There is one $1\frac{1}{2}$ -ton hand crane.

Pilotage.—For anchorage off the town—Vessels up to 200 tons, 17 ptas.; from 201 to 400 tons, 20 ptas.; from 401 to 700 tons, 25 ptas.; from 701 to 1,000 tons, 30 ptas.; from 1,001 and over, 35 ptas. Twice the above amounts are charged for taking vessels in and out of Port Naos. At night double rates are charged. Pilots go off as soon as the vessel comes in sight, and, as pilotage is compulsory, no one should attempt to enter without one.

Port Charges.—**Lighterage:**—Lighters of about 15 tons, for loading or discharging, 5 dollars per trip. **Interpreter's Fees:**—1 dollar per visit; seldom charged, and only under special circumstances. **Tonnage Dues:**—According to the weight of cargo discharged—on all vessels from ports in Europe, 5 reals vellon; from America, and other parts of the world, 10 reals vellon on every 1,000 kilos.

Vessels in ballast or merely touching for supplies, and not entering into any commercial operations, pay no dues with the exception of pilotage.

Labour:—15 reals vellon per man per day, with food; if without, 20 reals vellon. **Water:**—20 to 30 reals per pipe. **Beef:**—6 reals vellon per kilo.

Ballast:—5 dol. for 15 tons.

LAS PALMAS (Grand Canary).

Las Palmas, in lat. $28^{\circ}8'$ N., long. $15^{\circ}28'$ W., is the capital and principal port of Grand Canary.

Canary Islands—Las Palmas (Grand Canary) (continued).

Population.—Town, 44,517. Island, 127,471.

Imports.—Coal, cotton and woollen goods, manure, cereals, machinery, cement, coffee, sugar, and general merchandise.

Exports.—Bananas, tomatoes, potatoes, cochineal, wines, etc.

Accommodation.—The anchorage in an open roadstead is exposed to the N.E. trade winds. Puerto de la Luz is about 3 miles to the north of the city, and is sheltered from the N.E. by the peninsula, called Isleta. Here the Spanish Government have constructed a harbour of refuge, which gives shelter to vessels in all weathers.

The water area inside the port is 150 acres and the anchorage (ante-port) 137 acres. The length of the breakwater quayage is 6,026 ft., with a depth alongside at ordinary springs of 42 ft. at high water and 35 ft. at low. The length of the mole inside the breakwater is 1,650 ft., with 45 to 28 ft. alongside at highwater, and 38 to 21 ft. alongside at low ordinary springs. Vessels can discharge on both sides. There are two steam cranes to lift 6 tons, one steam crane to lift 30 tons, and six staithes for the shipment of coal up to 300 tons per hour each.

Loading and discharging can be carried on under shelter of the breakwater, and steamers requiring coal are quickly and efficiently served by lighters sent alongside. Every facility is afforded for dispatching day or night. Anchorage is on a sandy bottom, with from 7 to 8 fathoms at low water. At the head of the breakwater there is a fixed green light, 18 ft. above high water, which is visible at 6 miles distance. At the city mole there is a red light visible 6 miles. A red light also exists on the end of the Santa Catalina mole.

There is an up-to-date repairing yard where repairs of almost any magnitude are undertaken, and the services of experienced divers can always be secured. There are sheers to lift 20 tons and cranes for 30, 5 and 3 tons. There is also a patent slipway, 250 ft. long, with a lifting power of 1,500 tons. Two 12 in. salvage pumps, together with the necessary gear, may also be hired. Provisions are cheap and of good quality. This island is connected with Europe by a submarine cable to Cadiz.

Pilotage:—Compulsory. Fee, in and out, £1 7s., with extra for shifting berths, going alongside the breakwater, or mooring to a buoy, etc.

Port Charges.—Tonnage Dues:—Ships bringing cargo from Europe pay the equivalent of 2s. per ton; taking cargo to Europe, 1s. per ton; and to and from other countries outside of Europe, 2s. and 3s. per ton respectively, plus 25 per cent., which is a charge recently imposed by the "Junta del Puerto," for expenses in keeping the wharves, etc., in repair.

Sand Ballast:—This is obtainable at 3s. per ton, free alongside; cost of putting on board extra. **Labour:**—On board, 4s. per day. **Water:**—To both steam and sailing vessels, 4s. 6d. to 5s. per ton.

OROTAVA.

Orotava, in lat. 28°27' N., long. 16°38' W., is on the north coast of Tenerife, and is said to be the next best port to Santa Cruz.

Imports.—Dry goods, iron, lumber, grain, flour, chemical manures, paper, peat for packing fruit, etc.

Exports.—Bananas, tomatoes, potatoes, and almonds.

CAPE VERDE ISLANDS.

The Cape Verde Islands are an extensive group lying south of the Canary Islands and 450 miles to the west of Cape Verde, the nearest point on the African mainland. They occupy 1,450 square miles, with a population—chiefly mulattoes and negroes—of about 150,000. They belong to Portugal and are administered by a Governor, whose seat is at the capital, Praya; there is also a subordinate administration in each island. The trade is not of any great importance; cereals, coffee, and sugar cane are cultivated, and considerable quantities of salt, coral, and dried fish exported. But as a coaling station the group is of much importance to shipowners and masters. The most important island in this respect is

ST. VINCENT,

which contains the magnificent harbour of Porto Grande. This is very spacious, safe in all seasons and weathers, easy of access, and, from its geographical position, very convenient for steamers navigating south of the line, and especially to the Brazils and the River Plate. There is a lighthouse on the summit of the Bird Rock, at the entrance of the harbour. The light is a fixed white light of the fourth order, and has an elevation above the sea of about 300 feet. There are also two other lighthouses which serve as a guide for entering St. Vincent—one of the second order on Bull Point of St. Antonio, and the other of the fourth order on St. Pedros Bay of St. Vincent. There is also a station here of the Anglo-Brazilian Telegraph Co.

Accommodation.—There are three important coaling depots, where coal can be obtained with the utmost rapidity and dispatch. All vessels are visited up to 9 p.m., but if the agents are advised by telegram of the approximate time of arrival, visits are then made at any hour of the night, and coaling operations commenced at once.

Steamers in quarantine are allowed to coal after sundown, unless under very extraordinary circumstances.

The quarantine regulations are now very benevolently enforced, and men are allowed to go on board to coal steamers from suspected ports when there is no epidemic on board; at the same time traders would do well to provide themselves with Portuguese bills of health. There is a lazaretto here.

The port captain (an officer of the Portuguese Navy) has control of the port, and can require masters to change their berths if he does not think them suitable.

Best Welsh coal is brought off in iron barges, towed by steam launches. The rate of coaling varies according to the state of the weather and the facilities of steamers for coaling, some steamers taking as much as 250 tons per hour.

Repairs can be executed on a small scale. There are sheers to lift 15 tons and a crane to lift $1\frac{1}{2}$ tons.

Pilotage.—Not compulsory. The port is quite open and no pilot necessary.

Cape Verde Islands—St. Vincent (*continued*).

Port Charges.—Port Dues :—Steamers or sailing vessels calling simply for coal have to pay port dues amounting to about £2; if the late night visit is made, an extra fee of about £1 10s. is incurred. In the case, however, of sailing vessels of under 500 tons reg. there is a reduction in the charge for the medical officer's visits if made during the ordinary visiting hours. The foregoing are the only charges levied on vessels putting in for coal. Should they, however, land or load more than 5 cubic metres of cargo then they pay tonnage dues at the following rate: Steamers, 20 reis per reg. ton; sailing ships, 50 reis per reg. ton. **Towage :—**Masters of sailing vessels requiring the services of steam-tugs, for the purpose of towing their vessels into discharging berths, are charged £1 towage in and £1 towage out, the masters taking all risks. **Ballast :—**Rubble, 3s. to 4s. per ton including duty. **Water :—**Pumped from lighters alongside at 6s. per 220 gallons.

PRAYA.

Praya, on the island of Santiago, is the seat of Government of the Cape Verde Islands: Lat. 15° 0' N., long. 23° 40' W.

Population.—About 2,100.

Accommodation.—The harbour is small, deep and well sheltered, except from winds from the S.W. to S.E. by S. From December to May or June the harbour may be considered safe. The anchorage is in 4 to 6 fathoms at low water, about $\frac{1}{2}$ a mile off the town.

Fresh water, cattle, poultry, vegetables, etc., can be obtained at moderate prices. There is a coal depot on Quail Island, from which about 100 tons can be shipped per day.

The Island of Sal produces annually about 21,000 tons of salt. In accepting salt charters, shipowners should never sign "to load in turn," as it leads to endless delays. One vessel was kept waiting 50 days.

San Antonio has no good port, and at some seasons of the year it is inaccessible except by open boats.

Boa Vista yields about 2,000 tons of salt annually.

Mayo produces about 8,000 tons of salt per annum. Very little is now done in this commodity, however, owing to the heavy duty levied on it in Brazil, to which country nearly all the salt was previously exported.

Fogo and Brava are unimportant islands, the exports consisting of insignificant quantities of orchilla and oil seed.

FERNANDO PO.

Fernando Po, the largest of four islands in the Gulf of Guinea, belongs to Spain. It has an area of 739 square miles, is extremely fertile, but very unhealthy. The principal port of the island is Santa Isabel (formerly Clarence) in lat. $3^{\circ}45'$ N., long. $8^{\circ}45'$ E. Distance from Liverpool, 4,350 miles.

Population.—About 20,000.

Imports.—General merchandise.

Export.—Cocoa.

Accommodation.—The anchorage, 200 yards from shore, is in 8 to 10 fathoms, and is perfectly safe, offering every facility for loading and unloading. There is a wooden pier or jetty used for receiving cargo. Loading and unloading is done by surf-boats.

Vessels bound for Bonny, Old Calabar, Kamerun, etc., can call here and obtain a pilot.

This is a free port.

Excellent fresh water can be had, either by ship's boat, or at 2 dols. per cask of 150 gallons. Turtles and vegetables plentiful and cheap. Meat of every kind dear, say 1s. per lb.

There are no anchorage dues.

MADAGASCAR.

Madagascar, the third largest island of the world, is a French Colony. It has an area of 228,000 square miles and a population of 2,706,661. The north-west coast of the island is low, and everywhere indented by deep bays, well suited for commerce, but little frequented by shipping, with the exception of Bombetoka, or Majunga Bay, which is the estuary of several rivers, and the chief settlement on that side of the island. On the east side, south-easterly and southerly winds prevail during the winter months, say from April to October; during the rest of the year, especially in the hurricane months (December, January, February and March), northerly and north-easterly winds blow home, rendering the anchorage at Tamatave, Foule Point, etc., unsafe. The currents set along shore, running to the northward, with southerly and south-westerly winds, and to the southwards during the prevalence of northerly and south-easterly winds. The trade with the east coast centres with Tamatave, from which it is sent to London, Marseilles, or Hamburg.

Commerce.—The trade of the island is of an annual value of a little over 2½ million pounds sterling, the imports (Manchester goods, wearing apparel, hardware, provisions, beer and spirituous liquors, oil, furniture, etc.), in 1906 amounted to £1,461,104, and the exports (cattle, swine, poultry, hides, rice, tobacco, gold, straw, basket wares, rafia, caoutchouc, gum, and wax) to £1,127,552. The French tariff duty is imposed on all “foreign” goods, those from France and French colonies entering free.

Internal Communications.—The port of Tamatave is connected by rail with Ivondra, a distance of 7 miles, thence by a canal to Brickaville, from which point a railway 92 miles long is open to Moramanga. This railway is to be carried on to the capital Antananarivo, a further 76 miles. One section of this extension is already constructed, and a service of Government motor cars and rickshaws for mails and passengers and contractors’ hand carts for merchandise, afford transport facilities between the railhead and the capital. A postal service has been established throughout the island, together with telegraph and telephone systems in various commercial centres. One cable connects the island with the mainland at Mozambique and another with the island of Mauritius.

Currency, Weights and Measures.—The only legal coin is the 5 franc silver piece, with its silver sub-division and copper 5 and 10 centime coins. At the same time the Italian 5 lire piece and Belgian, Greek, and other coins of like value circulate freely, whilst English and French gold coins pass with facility. The French metric system of weights and measures is generally used. The Comptoir National d’Escompte de Paris has established agencies at Antananarivo, Diego Suarez, Manazary, Majunga, Tamatave, and Tulear. The Credit Lyonnaise is also represented by a private bank, the Banque Grenard, through which it transacts business.

Madagascar.**DIEGO SUAREZ BAY.**

Diego Suarez Bay, in lat. $12^{\circ}25'$ S., long. $49^{\circ}20'$ E., is on the north coast of Madagascar.

Imports.—General merchandise.

Exports.—Cattle, salt, caoutchouc, coral, tortoise shell, timber, preserved meats, skins, mangrove bark, and gold.

Accommodation.—Diego Suarez Bay is a good harbour. It is a place of call for the steamers of the Messageries line, and is the starting point of the branch line for Mozambique, Beira, and Lourenço Marques. The steamers carrying cattle to Mauritius and Réunion call here, and at the time of the N.E. monsoon many sailing vessels from Bombay bring supplies for the Indian traders.

Pilotage.—Optional; if a pilot is taken the charge is according to the tonnage of the vessel.

Port Charges.—**Sanitary Dues** :—3 c. per ton, payable only at the first port of call in Madagascar. **Towage** :—1,000 fr. up to 2,500 tons, according to the tonnage. **Lighters** :—Of 50 tons to 140 tons, 8 fr. per ton; hiring lighters, 1 fr. per ton per day; towing lighters with steam launch from 50 to 200 h.p., 15 to 20 fr. per hour. **Shipbroker** :—Entrance, $2\frac{1}{2}$ per cent.; clearance, 5 per cent. **Stevedore** :—Loading, 8 fr. per ton; discharging, 8 fr. per ton. **Dispatch** :—The average daily work on a vessel—maximum 300 tons for a steamer, 100 to 150 tons for a sailing ship. **Ballast** :—Pebble or sand, 6 or 7 fr. per 1,000 kilos. **Provisions** :—Vegetables, 50 c. to 1 fr. per kilo.; bread, $8\frac{1}{2}$ c. per kilo.; beef, 1 fr. per kilo.; poultry, 1 fr., to 1 fr. 50 c. per kilo.

Pro Forma Charges on a steamer of 2,750 net reg. tons :—

	Fr.	c.
Cable to owner, announcing arrival	12	05
Cable to the next calling, announcing arrival	1	10
Pilotage entrance and clearance	100	00
40 men working to shift the stowage, 3 days at 5 fr. per day each	600	00
2 foremen, 10 fr. the day, 3 days	60	00
4 markers, 5 fr. the day, 3 days	60	00
150 tons fresh water, 6 fr. per ton	900	00
180 tons coal at 75 fr. per ton	13,500	00
Advance to the captain	500	00
Boat-hire (5 days)	75	00
Shipbroker, entrance, 1 fr. per ton on 1,600 tons	1,600	00
Shipbroker, clearance, 5 per cent. on 2,000 fr.	100	00
Cable to next calling, announcing departure	1	10
Cable to owner, announcing departure	12	05
Postages and petties	50	00
Surveyors and certificate, unloading	16	95
Loading goods, inspection	163	75
Provisions bill	365	05

18,117 05=£718 16s. 7d.

Antsirana, the town and French settlement, is in lat. $12^{\circ}28'$ S., long. $49^{\circ}20'$ E.

Population.—8,200.

Vessels of the largest draught can come up to Port Nievre, abreast of Antsirana, and anchor in $3\frac{1}{2}$ to 6 fathoms. The anchorage is good and well sheltered.

Madagascar.

FENERIVE.

Fenerive, in lat. $17^{\circ}18' S.$, long. $49^{\circ}25' E.$, is about 12 miles N. of Mahambo.

Population.—About 2,000.

Imports.—Cotton goods, hardware, crockery, wine, beer, and spirits.

Exports.—Rice, hides, wax, rubber, coffee, etc.

Accommodation.—Vessels anchor about $\frac{1}{2}$ a mile from the shore. The anchorage is not good at any time, but decidedly bad in the winter; during the best season, April to October, vessels should anchor in $4\frac{1}{2}$ to 6 fathoms.

This port is not now frequented by shipping, except very small coasters.

FORT DAUPHIN.

Fort Dauphin is in lat. $25^{\circ}0' S.$, long. $46^{\circ}50' E.$

Population.—1,400.

Imports.—Provisions, vegetables, beer, wines and spirits, sheet iron, soap, glass, pottery, axes, shovels, pick axes, mining utensils, boots and shoes, etc.

Exports.—Dry skins, wax, indiarubber, fish, etc.

Accommodation.—Vessels usually moor in from 16 to 18 metres ($52\frac{1}{2}$ to 59 ft.) water.

Port Charges.—**Sanitary Dues** :—5 c. per ton. **Navigation Dues** :—Passport (including stamp), 1 fr. 95 c. **Boat Hire** :—10 fr. per ton of cargo. **Labour** :—1 fr. per day.

FOULE POINT.

Foule Point, in lat. $17^{\circ}45' S.$, long. $49^{\circ}30' E.$, is about 37 miles north of Tamatave. Climate very unhealthy.

Population.—About 1,500.

Imports.—Rum, etc.

Exports.—Rice, wood, rice bags, and mats.

Accommodation.—This is a tolerably safe port, and during the fine season, between April and October, when hurricanes are rare, vessels can be moored opposite the Custom House. The anchorage is good and firm, and vessels of any tonnage can be admitted into the roadstead. There is a huge reef, extending a mile seaward, parallel to the coast, which is dry at low water.

This port is now only frequented by very small coasters.

MAHAMBO.

Mahambo is in lat. $17^{\circ}35' S.$, long. $49^{\circ}30' E.$

Population.—About 400.

Imports.—Rum and cottons.

Exports.—Rice, tobacco, salt pork, beef, and hides.

Accommodation.—There is good anchorage and deep water, and the place is much healthier than Foule Point. This port is now only frequented by very small coasters.

Madagascar.

MAHANORO.

Mahanoro is in lat. $19^{\circ}55'$ S., long. $48^{\circ}40'$ E.

Accommodation.—Mahanoro is a good anchorage. Vessels lie in 6 fathoms of water about a mile from the town. Shipmasters should not run down on the land if the S.E. wind is strong, as the coast is low, and there is a strong current to the S. Winds from the N.E. have to be guarded against, and vessels should be ready at all times to slip their moorings. Vegetables are scarce, beef and poultry are cheap.

This port is rapidly becoming of no importance. Its trade is now so insignificant that the stay of a few hours every month of the postal steamer is sufficient to meet its demands.

MAHELA.

This port is now of no importance to shippers.

MAJUNGA.

Majunga, in lat. $15^{\circ}43'$ S., long. $46^{\circ}20'$ E., is on Bembatooka Bay, in the Mozambique Channel.

Population.—4,600.

Accommodation.—The anchorage is in 4 to 6 fathoms, about $\frac{1}{2}$ mile from the shore, and is perfectly safe at all times. Owing to its situation Majunga is likely to become a port of importance as a starting point to the trade route to Antananarivo, and is at the mouth of the waterway of the Betsiboka River, which is navigable for small steamers to Suberbieville, 200 miles from the coast, for 9 months in the year. Cargo is landed by barges belonging to the Compagnie de Botelage de la Cote Ouest; dispatch, 400 to 500 tons per day.

Port Charges.—**Harbour Dues** :—5 c. per reg. ton. **Discharging** :—8 fr. per ton.

MANANJARA.

Mananjara, in lat. $21^{\circ}17'$ S., long. $48^{\circ}20'$ E., is the second port on the E. coast in importance to Tamatave. It is the port for the interior towns of Fianarantsoa, Ambositra, and Antsirabe.

Population.—Native, about 3,800; European, 500.

Imports.—Cotton fabrics, hardware, including mining tools and appliances, provisions, wine, spirituous liquors, paints, oils, petroleum, wearing apparel, crockery, furniture, salt, etc.

Exports.—Rubber, beeswax, rafia, hides, skins, rice, beans, coffee, vanilla, grass mats and bags, and rafia cloths.

Accommodation.—Mananjara is an open roadstead about 28 miles S. of Mahela. The anchorage is made E.N.E. of the reef which runs northward about 2 miles from the river's mouth and parallel to the coast, from which it is about a mile distant. Owing to the heavy seas, landing should only be made by decked lighters, provided by the local Boating Company, and never attempted in the ship's boats. The steamers of the Cie. Havraise Peninsulaire call here monthly.

Madagascar.

MORONDAVA.

Morondava is in lat. $20^{\circ}17'$ S., long. $44^{\circ}17'$ E. It is an open roadstead, anchorage in 7 to 8 fathoms about a mile from the shore. Cargo is landed by means of small dhows and cutters.

NOSSI-BÉ.

Nossi-Bé (Nosbeh) is in lat. $13^{\circ}0'$ S., long. $48^{\circ}36'$ E., close to the N.W. part of Madagascar.

Population.—About 10,000.

Imports.—Cotton goods, guns, powder, and lead.

Exports.—Ebony and other woods, sesame, sugar, rice, wax, etc.

Accommodation.—There is good anchorage in 6 fathoms water but it is exposed to winds from the S.W.

The French settlement of Hellville is on the south side of the island.

TAMATAVE.

Tamatave, in lat. $18^{\circ}15'$ S., long. $49^{\circ}30'$ E., is a seaport town on the east coast of Madagascar.

Population.—7,026.

Imports.—Cotton cloths, wearing apparel, hardware, provisions, beer, spirituous liquors, oil, chairs, etc.

Exports.—Oxen, swine, poultry, hides, rice, tobacco, specie, straw, basket wares, rafia, caoutchouc, gum, and wax.

Accommodation.—Large steamers visit this port; the Messageries Maritimes twice a month from Marseilles, and one monthly steamer via Havre and Marseilles. It possesses a commodious harbour, with a safe anchorage during eight months of the year, from April to November.

Pilotage.—25 fr. per vessel.

Port Charges.—**Port Dues** :—Foreign shipping, 5 c. per reg. ton.

Sand Ballast :—1 dol. per ton. **Water** :—1 dol. per 200 gallons. **Labour** :—2s. per man per day. **Lighterage** :—For loading or discharging steamers, 4s. per ton; sailers, 3s. per ton.

VATOMANDRY.

Vatomandry, in lat. $18^{\circ}45'$ S., long. $49^{\circ}5'$ E., is situated about 85 miles south of Tamatave,

Population.—2,500.

Imports.—Cotton goods, hardware, liquors, provisions, and salt.

Exports.—Rafia, beeswax, hides, and plantation produce.

Accommodation.—This is an open roadstead. Vessels find good anchorage somewhat close to the coast, and E.N.E. of the river's mouth. It was formerly the landing point for the capital, but since the route has been changed in favour of Tamatave its commercial importance has greatly diminished. It is still a place of call for the usual monthly steamers, and is occasionally frequented by small sailing vessels.

Port Charges.—**Entrance or Clearance Fees** :—Nominal; a vessel of about 2,000 tons paying about 2 fr. **Boat Hire** :—Lighters, 10 fr. per passenger. **Ballast** :—About 6s. per ton.

Madagascar.

SAINTE MARIE ISLAND.

Sainte Marie, in lat. $17^{\circ}50'$ S., long. $49^{\circ}50'$ E., is a small island E. of Madagascar, belonging to France, from which it is separated by a channel 4 miles wide. The island, which has an area of 64 square miles, is unhealthy.

Population.—5,000.

Imports.—Manufactured goods, rum, salt, and glass-ware.

Exports.—Rice, cattle, poultry, fish, skins, etc.

Accommodation.—There is good anchorage in this channel almost anywhere, and vessels are in perfect safety. The trade is carried on principally with Réunion, Mauritius, and Madagascar. The harbour is called Port St. Mary. The French settlement is on an island called Madame or Quail, situated at the entrance to Port St. Mary. There is good anchorage in 3 to 5 fathoms, about a cable length from shore. A few coasters are annually built here.

The steamers of the Messageries Maritimes call here fortnightly. Fresh water and fresh provisions can be obtained.

MADEIRA.

Madeira is in lat. $32^{\circ}46'$ N., long. $17^{\circ}0'$ W. Area, 314 square miles.

Population.—150,574.

Imports.—Coal, dry goods, wine, maize, wheat, rice, sugar, tea, molasses, salt cod, cheese, staves, lumber, tobacco, paper, candles, and petroleum.

Exports.—Embroidery, wine, potatoes, fruit, etc., onions, butter, eggs, wicker-work, boots and shoes.

On St. Lorenzo Point, the eastern extremity of Madeira, in lat. $32^{\circ}14'$ N., long. $16^{\circ}39'$ W. of Greenwich, a fixed and flashing white light, showing a flash every 30 seconds, is exhibited on a tower 41 ft. high, 343 ft. above the level of the sea. In clear weather it should be seen 25 miles. A small fixed red light, elevated 112 ft. from the sea, is exhibited on the Loo Rock, in Funchal Bay.

Madeira is in direct communication with Europe, Azores, Cape Verde, West Coast of Africa, and Brazil, by submarine telegraph. The rate for telegrams to England is 1s. 3d. for each word, but varies according to the rate of exchange.

Custom House Regulations.—The master of every ship bound to Madeira with cargo is required to bring two manifests, signed by himself, which he must deliver to the Custom House officer on his arrival on board, together with a list of passengers and of all provisions and stores on board, all likewise signed by himself.

The manifests must declare the name and tonnage of the vessel, the nation she belongs to, her port of loading, names of shippers and of those to whom the goods are consigned; specify minutely the quantity and quality of the goods and packages, their marks, numbers, weight, and value.

Madeira.

No consular manifests are now required, but goods on bill of lading must be accompanied by consular invoices. Small parcels of not more than 5 kilos. in weight, and £10 in value, must be declared on "Parcels List" and require no consular invoice.

When the Custom House officers go on board a vessel for the purpose of searching her, the master is bound to open and show all cupboards, drawers, boxes, lockers, as may be required, and should he refuse to do so, or make any difficulties, they may be broken open.

The master of a vessel is bound to receive on board the guards that the visiting officer may deem proper to leave on board.

The master of a vessel is subject to a fine of from 2 to 200 dols. (1 dol. = 1,000 reis) : When he neglects to clear at the Custom House and make his entry within the stipulated time as above ; when the manifests are not made out as required above ; when the manifests omit declaring any article or goods found on board, or when any article or goods manifested are not produced or forthcoming ; when the manifests required have not been produced or delivered ; when goods or any packages are found on board any vessel loading without a permit from the Custom House ; when goods have been seized or arrested that have been discharged clandestinely ; when goods are either discharged or taken on board in the absence of the Custom House officer or guards ; when, in the act of searching the vessel, any goods, packages, or articles be found on board not manifested or mentioned in the list of provisions and stores.

Port Rules.—Ships, on arrival and departure, are required to display their national flag. Ships, on their arrival, are visited by a pratique boat, after which visit they are allowed intercourse with the shore ; vessels which have anchored cannot depart without entry and clearance at the Custom House. Masters of ships are required, on arrival, to furnish a list of their passengers, and are not allowed to take away local 3rd class passengers unprovided with local passports.

Quarantine Regulations.—Ships from ports considered "clean," arriving at Funchal with clean bills of health, certified by the Portuguese Consul at the port of departure, are admitted to free pratique, provided the vessels be free from any contagious disorder, and the number of persons on board agrees with the bill of health.

When vessels which are not bound for Madeira simply call at Funchal, the Consul's attestation of the bill of health is usually dispensed with if they come from a port considered "clean," and provided that the bill of health is attested by a Consul of another nationality.

The lazaretto establishment is only available for passengers landing from vessels coming from "suspected" or "infected" ports, and in such cases the quarantine is nominal ; but vessels from infected ports are obliged to perform quarantine at Lisbon.

FUNCHAL, in lat. 32°46' N., long. 17°0' W., on the S. side of the island, is the only port of entry in Madeira.

Population.—43,970.

Accommodation.—Funchal is a roadstead in an open bay, exposed to winds from S.E. round by S. to W. Vessels from the N. and E. go through the passage between the Dezertas and Madeira. The water is deep, and the shores generally clear, with no dangers. The winds

Madeira.

prevail from N.E. ; but during winter occasionally, but not frequently, they blow with violence from E.S.E., veering round to S. and S.W., throwing a heavy sea into the bay ; and it is considered prudent on such occasions, should the barometer denote a coming storm, to put to sea at its commencement. There is a breakwater between the Loo Rock and the Pontinha, and a stone jetty, 230 ft. long, running from the centre of the town.

Vessels approaching Funchal can communicate, by means of the International code of signals, with their agents at Funchal through the St. Lorenzo station, eastwards, or through the Pargo Point station, at the western end of Madeira. Vessels passing can likewise be reported from those stations.

The best anchorage is S.W. of the town, off the Loo Rock Island Fort, in 20 to 25 fathoms, with the Citadel Fort above the town showing between the Loo Rock and the Fort, on the landing place, near to and W. of the Loo Rock. Steamships may anchor nearer to the town to coal, in from 8 to 12 fathoms. During the summer months vessels may anchor anywhere in the bay ; the bottom is dark sand. On the Loo Rock stands the signal station and the lighthouse. When the wind blows fresh from the N.E. in the offing of Funchal, there is almost invariably, especially during the summer months, a counter westerly sea breeze in the bay, and a current setting to the E. This westerly sea breeze is generally light and baffling near to the confines of the true N.E. wind, but it freshens inshore. Sailing vessels arriving in the daytime are recommended to keep in the true wind till opposite the town, and then to work into the anchorage with the counter sea breeze, which usually sets in from W. to S.W. some time in the forenoon. At night the breezes usually draw more off the shore, and vessels should endeavour to fetch such a position as will enable them to make the westerly sea breeze available in the morning.

Steamships are coaled with great rapidity.

Care should be taken to prevent the clandestine introduction of spirits on board by the bumboats.

Pilotage.—Pilots are necessary.

Port Charges.—Vessels anchoring pay the following charges :
Visiting Officer's Fee and Health Fees :—6,995 reis=30s. **Custom House Fees** :—On vessels discharging or loading cargo, 13,000 reis (£2 17s. 11d.). Custom House officers put on board, per day, 800 reis (3s. 8d.) each ; bill of health, 1,060 reis (4s. 9d.). **Labour** :—Ship carpenter and caulker, 4s. 2d. to 5s. per day ; stevedore, 4s. 2d. ; discharging or loading 2s. 6d. to 3s. 4d. per man per day. **Stone Ballast** :—1s. 9d. per ton, delivered alongside. **Spring Water** :—Put on board, 2s. per 100 gallons. **Fresh Beef** :—About 6½d. to 7d. per lb. ; coal, 28s. to 30s. per ton. **Lighterage** :—About 2s. 6d. per ton. **Commission** :—When agency charges are not regulated by charter party, the custom is to charge 5 per cent. on cash advanced, and 5 per cent. on freight obtained.

At Ponta do Sol, a village about 9 miles W. of Funchal, and at Calheta, 6 miles further W., there are sugar manufactories worked by steam. Neither of these places can be considered safe for vessels to anchor off, except perhaps in the summer months. They are open anchorages.

MAURITIUS, with its dependencies Rodriguez and the Chagos Archipelago.

The island of Mauritius lies in the Indian Ocean, about 500 miles east of Madagascar. It has an area of 705 square miles, with a population, on January 1, 1907, of 377,644, of whom 263,983 were British Indians. The government is that of a British Crown Colony, limited, however, by the fact that there is a Council of Government consisting of the Governor and 27 members, 10 being elected, 8 ex-officio, and 9 nominated by the Governor. The islands of Rodriguez and Diego Garcia and a few small islets of the Chagos Archipelago are dependencies of Mauritius. The trade of the island is valued at about £4,000,000 per annum, the imports during 1907 having been returned at a little over £1,278,000, and the exports at about £2,743,000. The principal article of export is sugar, of which large quantities are sent to the United Kingdom, India, Australia, and South Africa. The number and tonnage of ships visiting Mauritius is naturally dependent on the amount of trade, and the trade varies with the crop. But the general tendency is towards larger ships—requiring quick dispatch. Unfortunately, owing to quarantine regulations and to insufficient lighterage, the demands of the shipping companies have not so far been completely satisfied, but harbour improvements at Port Louis have been carried out and greater facilities provided.

In connection with these harbour improvements it may be pointed out that on June 30, 1905, a Government Ordinance was promulgated imposing a special charge of 15 cents per net reg. ton on all vessels entering the harbour in order to cover the cost of the work done by the dredger *Cerin*. This regulation provided that such extra charge shall only be levied once on vessels during any one month, and that it shall not be levied on vessels entering in distress, or on those entering solely for the purpose of coaling or taking in provisions, water, or ballast. This provision is to remain in force for such period, not exceeding six years, from the date of the promulgation of the Ordinance, as may be necessary to defray the actual cost of the dredging and deepening work of the harbour.

Port Louis, on the north-west coast of the island, is now the only important port, Grand Port or Mahebourg on the south-east being little used, owing to the fact that it is exposed to the south-east trade winds. All accounts are kept in the Indian rupee, which, with its sub-divisions, is now the standard coin. The metric system of weights and measures has been adopted. There is an excellent post and telegraph service, and cable communication with the African mainland, thence to Australia and Europe. The island possesses many good roads and a railway 120 miles long (exclusive of sidings).

Mauritius.

PORT LOUIS (Mauritius).

Port Louis is in lat. $20^{\circ}11'$ S., long. $57^{\circ}30'$ E. Distance from Liverpool by the Cape, 8,230 miles ; by Suez Canal, 6,947 miles.

Imports.—Provisions, cotton stuffs, iron, cereals, rice, hardware cutlery, machinery, copper, linens, wine, coal, guano, and sulphate of ammonia.

Exports.—Sugar, rum, molasses, fibre, vanilla, cocoa-nut oil, etc.

Accommodation.—The harbour can be entered by vessels drawing 26 ft., and is perfectly sheltered from all winds except from the N.W. which very seldom blow with any force, except in a hurricane. The hurricane season is considered to extend over 5 months, and is counted from December 1 to April 30. Practically all cargo is landed by lighters, there being neither accommodation nor depth of water for vessels of any size, or of deep draught, alongside the wharves. There is a Government crane at the head of the harbour to lift up to 25 tons.

The following are the dimensions of the dry docks and slips :—

Dock.	Length over all in feet.	Width of Entrance at High Spring Level in feet.	Depth on the Sill at High Springs in feet.
Hay	324	46	13½
Stevenson	430	60	19
Albion	318	60	19½
Patent slip	Cradle 143	Lifting power 400 tons	Forward . 8 Aft . . 12
Patent slip (old)	„ 106	For lighters and coasters	Forward . 5 Aft . . 10

There is no regular tariff of charges, the docking, painting, and repairing of vessels being subject to arrangement.

All ordinary repairs can be carried out.

The following signals are made from the flagstaff of the Port-office, and repeated at Fort George, on the approach of bad weather :—

Signals to ships and vessels in the harbour and roadstead—

DAY SIGNALS.

A white flag, with horizontal blue stripes and ball above.—Send down top gallant yards and masts and prepare for bad weather. The masters of all ships and vessels in port are required immediately to repair on board their respective vessels ; and vessels at the bell-buoy ought to proceed to sea.

A red flag, with a ball above.—Strike lower yards and topmasts.

N.B.—The signals, respectively, shall be confirmed by a gun from Fort George. The several ships and vessels are required to answer the above, by hoisting the jack of their nation at the main.

NIGHT SIGNALS.

One blue light at the Port-office, repeated at Fort George, and accompanied by a gun.—Vessels at the bell-buoy to proceed to sea forthwith ; and vessels in the port to make every preparation for bad weather.

Ships at the bell-buoy can communicate with the Port-office by

Mauritius—Port Louis (Mauritius) (continued).

Marryatt's signals or Commercial Code; the same to be kept flying till answered by the pendant at the flagstaff battery.

Port Regulations.—No communication with the shore is permitted until vessels have received pratique.

Every vessel of, or exceeding, 100 tons reg. burden, entering or leaving the port, docking, undocking, swinging at a hulk, or moving from place to place, shall do so under charge of a licensed pilot, and not otherwise. The Government is not responsible for any loss or damage occasioned by the act of such pilot.

No vessels, but men-of-war and mail steamers, will be allowed to enter the harbour until their flying and standing jibbooms are run in, also the studding-sail booms as soon as the vessel is moored. No guess-warp booms are to be used in the harbour, nor may any warps or lines be made fast from vessel to vessel, or from a vessel to a buoy or kedge, so as to obstruct the harbour, except by order of the pilot or other competent authority, and then only so long as is consistent with the safety of the vessel requiring them.

(N.B.—Commanders of vessels not complying with this important regulation are warned that no application for indemnification for damage to such spars will be entertained, and that should damage be occasioned to other vessels, by inattention to this regulation, the vessel causing such damage will be held responsible.)

From December to April inclusive every vessel in the harbour shall be moored with two bower anchors and chains forward, and two bower anchors and chains astern, having buoys and good buoy-ropes attached to them. In other months one bower anchor and chain astern will be deemed sufficient. Owners and commanders shall, at all times, take such further precautions for the safety of their vessels that the harbour-master may require of them.

The commanders of vessels shall give notice in writing at the Port-office of the departure of their vessels—the commanders of sailing vessels 24 hours' notice, and the commanders of steamers 6 hours' notice. A flag shall be hoisted at the main-topgallant masthead from the time such notice is given until their departure. English vessels to hoist the jack, and foreigners the small flag of their country.

All vessels shall, if possible, leave the harbour immediately after swinging, and if, after the expiration of 24 hours, they have not left it, they may be re-moored, if the harbour-master thinks fit, at their own expense.

From December to April inclusive all vessels moored in the harbour are to keep their topgallant masts and yards on deck, and top ropes and lower tackles rove, in order that they may be in constant readiness to strike topmasts and lower yards on the first order from the harbour-master.

N.B.—The striking of topmasts will not be insisted upon, but left to the discretion of the masters of vessels themselves. All yards must be laid fore and aft on deck.

Upon the signal being made to send down topgallant yards and masts, all commanders of vessels in the harbour shall repair on board their respective vessels, and remain on board while the bad weather lasts.

Commanders of merchant vessels of all nations are strictly prohibited from hoisting at any masthead of their respective vessels, while in

Mauritius—Port Louis (Mauritius) (continued).

the roadstead or harbour, any pendant or anything that may be construed into a pendant, or from flying any other ensigns than such as are allowed by law..

Time Signals.—A ball is hoisted half mast on Signal Mountain 5 minutes before the signal is made, and close up 2 minutes before. The ball is dropped at 1 h. 0 m. 0 s. p.m. Mauritius standard mean time, equivalent to 21 h. 0 m. 0 s. Greenwich mean time.

Pilotage.—

	Rs.	c.
For pilotage inwards and mooring, per ton reg.	0	04
For unmooring and pilotage outwards, per ton reg.	0	04
<i>Provided that in each case the minimum charge shall not be less than 20 rupees.</i>		
<i>Vessels under 100 tons burden entering the harbour shall not be required to take a pilot.</i>		
For taking a pilot to the Bell-buoy and not entering the harbour :—		
For vessels under 500 tons	15	00
For vessels above 500 and up to 1,500 tons	20	00
For vessels above 1,500 tons	25	00

Towage :—

	Rs.	c.
For every vessel not above 100 tons	20	00
For every vessel above 100 and not exceeding 200 tons	25	00
For every vessel above 200 and not exceeding 400 tons, per ton reg.	0	15
For every vessel above 400 tons, 60 rupees for the first 400 tons, and for every ton in excess of 400 tons	0	10

Port Charges.—Anchorage Dues :—

	Rs.	c.
For every vessel breaking bulk or receiving cargo, per ton reg.	0	38
For moving any vessel from one berth to another in the harbour :—		
For vessels under 200 tons reg.	20	00
For vessels over 200 tons reg., for the first 200 tons	20	00
For every ton reg. over 200 tons	0	02
For every colonial registered vessel trading with Madagascar, Réunion Island, or the dependencies of Mauritius, per ton reg.	0	25
<i>Provided that the last charge of 25 cents per ton on any such vessel shall not be levied more than twice in one year.</i>		
For every vessel not breaking bulk or receiving cargo, per ton reg.	0	23
For swinging any vessel alongside of a hulk	20	00
For re-mooring any vessel	20	00
For any vessel remaining swung on warps above 24 hours, or above 48 hours, when the harbour master has certified in writing that the vessel was prevented by unfavourable winds from leaving the harbour at the end of 24 hours after being swung :—		
If up to 100 tons	10	00
If above 100 tons but not exceeding 1,000 tons	30	00
If above 1,000 tons but not exceeding 1,500 tons	60	00
Above 1,500 tons	70	00

Hire of Chains, Anchors, and Boats :—

	Rs.	c.
For every vessel not above 150 tons :—		
One anchor, per diem	0	50
One chain, per diem	0	50
For vessels above 150 tons :—		
One anchor, per diem	1	25
One chain, per diem	1	25
For the use of mooring chains or anchors placed around Trou Fanfaron :—		
For each vessel not above 100 tons, per diem	0	50
For each vessel above 100 tons and up to 400 tons, per diem	1	00
For each vessel above 400 tons, per diem	2	00
For the use of a launch (manned), per diem	15	00
For the use of mud boats, not to be detained over 4 hours alongside the vessel	15	00
If kept longer than 4 hours, per hour or fraction thereof	5	00

Mauritius—Port Louis (Mauritius) (continued).

Harbour Improvement Dues :—A special extra charge of 15 cents per ton is levied to meet the expense of dredging the harbour. The following vessels are exempt : Vessels entering the harbour more than once during the same month, vessels in distress, and vessels entering solely for the purposes of coaling, or taking in provisions, water, or ballast.

All vessels abandoned in the harbour and not broken up within 3 months, or sold and not broken up or fitted for sea within the same period from the date of sale, shall be subject to a harbour fee of 2 cents per ton reg. per month, provided that the fee shall in no case be less than 10 rupees per month.

Vessels in distress are charged pilotage and other harbour dues. *Exemptions.*—No pilotage or anchorage dues shall be charged on the following vessels :—

(a) British or foreign men-of-war and transports, or vessels belonging to the Government of Mauritius, and vessels under 100 tons burden ; unless the commander or master has requested to be supplied with a pilot.

(b) Vessels breaking bulk at the Bell-buoy, and discharging cargo to the extent of not more than 25 tons ; or landing not more than five horses, mules, or donkeys, or twenty sheep, pigs, or goats.

(c) Vessels touching at Port Louis without entering the harbour.

Local Light Dues :—On all vessels entering the harbour, or discharging or shipping cargo in the roadstead of Port Louis, .09 c. per reg. ton. (The above dues are not levied more than twice within 12 calendar months on any one vessel.) **Light Dues** for the Great Basses, Little Basses and Minicoy lighthouses :—Great and Little Basses, $1\frac{3}{4}$ d. per ton ; Minicoy, $1\frac{1}{4}$ d. per ton.

Stevedore's Charges :—*Loading*—Sugar for India, 25 c. per ton ; sugar for Europe, Australia, and the Cape, 50 c. per ton ; molasses, 25 c. per cask ; rum and oil in casks, 25 c. per cask ; fibre, 25 c. per bale ; hides, 75 c. per ton. *Discharging*—Rice, and all cargo in bags, 50 c. per ton ; coal, 75 c. per ton ; general cargo, no lifts exceeding 3 tons, 75 c. per ton ; special rates for lifts exceeding 3 tons ; railway material, 1 rupee per ton ; petroleum, 1 rupee per ton ; flour, 1 rupee per ton ; scrap iron, 1 rupee per ton ; planks, 75 c. per ton ; baulks, 3 rs. per ton ; day labourers, 2 rs. to 3 rs. per man per day ; dunnage wood, 10 rs. to 12 rs. per cord ; mats for dunnage, 5 rs. per 100.

Lighterage :—

	Per ton. Rs. c.
Landing or shipping of rice, sugar, flour, and such like cargo in bags	1 25
Ammonia and nitrate of soda	1 50
Timber, bricks	1 75
Wine in casks or cases	1 25
Rum and cocoanut oil	1 25
Ordinary case and bale goods	1 25
Coal	2 00
Rails	4 00
Heavy machinery, 5 to 10 rs. per ton.	

Crane Dues :—For use of crane for lifting heavy weights, 2 rs. per 1,000 kilos., except in the case of machinery imported and paying duty, when the charge is 1 rupee per 1,000 kilos.

Commissions :—

	Per cent.
On goods landed on account of damage incurred by the vessel and reshipment of the same, according to value	$\frac{3}{4}$ to 2 $\frac{1}{2}$
On freight or passage money procured	5
On the collection of freight or passage money	2 $\frac{1}{2}$

Mauritius—Port Louis (Mauritius) (*continued*).

	Per cent.
On ship's disbursements when the agent is in funds	2½
On ditto when consignee furnishes funds	5
On disbursements for vessels under repairs	5
On letters of credit and advances of funds from which no other commission is derived	2½
On effecting insurances on the amount insured	½
On sales or purchases of vessels, whether abandoned or whether purchased or sold under power of attorney	5

Provisions :—Biscuits, 15 rs. per 50 kilos. ; salt beef, 90 rs. per cask of 300 lb. ; flour, 11 rs. to 16 rs. per bag of 200 lb. ; rice, 10 rs. to 15 rs. per bag of 75 kilos. ; sugar, 9 rs. to 10 rs. per 50 kilos. ; fowls, 12 to 18 rs. per doz. ; eggs, 8 rs. per 100 ; beef, 50 c. to 60 c. per kilo. ; potatoes, 10 rs. to 12 rs. per 50 kilos. ; vegetables cheap and abundant, say 2 rs. to 3 rs. per day for a crew of thirty hands.

Water :—2 rs. per ton if supplied in the inner harbour, 3 rs. per ton if between the Forts, and 5 rs. per ton if at the Bell-buoy. Vessels are supplied by tanks, of which there are two steam ones.

Ballast :—Stone ballast, 3 rs. to 3 rs. 50 c. per ton, put on board and trimmed. Shipmasters arranging for the supply of ballast are recommended to insist on the quantity supplied being paid for according to their vessel's displacement scale.

TONNAGE SCALE.

Bran and Indian oats, 15 bags to the ton ; rice, dholl, pepper, linseed, 13 bags ; coffee, potatoes, bark, 8 bags ; cotton, in bales, 2 bales ; wine, rum, tallow, tar, pitch, 4 casks ; molasses, 3 tierces ; beer in casks, 4 ; flour, beef, pork, bottled beer, in barrels, 6 ; wine, in cases, 25 ; empty casks, 6 ; sugar, 1,000 kilos. ; butter, 10 cases ; 1 inch planks, 40 ; teak logs, 40 cubic feet ; vacoa bags, 400 ; gunny bags, in bales, 2 ; soap, in bales, 70 to 100, in cases, 25 ; cocoanuts, in husks, 500 ; without husks, 2,000.

Pro Forma Charges on a steamer of 958 tons net reg., in ballast, and out with 1,670 tons sugar :—

	Rs.	c.
Captain	150	00
Butcher	277	80
Stevedore	920	00
Hire of anchor and chains	75	00
Water	27	00
Running lines	52	00
Pilotage inwards and mooring at '04 c. per ton	38	32
Pilotage outwards and unmooring at '04 c. per ton	38	32
Anchorage at 38 c. per reg. ton	364	04
Light dues at '09 c. per ton (first voyage)	86	22
Extra charge for dredger at 15 c. per ton	143	70
Stamps for Customs clearance	5	00
Bill of health	5	00
Entering and clearing at Customs	20	00
Telegrams	39	90

2,242 30 = £149 9s. 9d.

Pro Forma Charges on a steamer of 1,754 tons net reg. calling for coal :—

	Rs.	c.
Water	66	00
Gratuity to pilot	40	00
Running lines	54	00
Boat hire	6	00
Pilotage inwards and mooring at '04 c. per ton	70	16
Carried forward	236	16

Mauritius—Port Louis (Mauritius) (*continued*).

	Rs.	c.
Brought forward	236	16
Pilotage outwards and unmooring at '04 c. per ton	70	16
Anchorage at 23 c. per ton reg.	403	42
Light dues at '09 c. per ton (1st voyage)	157	86
Stamps for Customs clearance	5	00
Bill of health	5	00
Entering and clearing at Customs	20	00
Telegrams	26	80
Postage	1	05
	925	45 = £61 14s. 0d.

Pro Forma Charges on a steamer of 2,358 tons net reg., with 4,503 tons of coal in, and 5,304 tons of sugar out :—

	Rs.	c.
Captain	574	00
Stevedore, inward cargo	3,309	75
Stevedore, outward cargo	2,883	50
Ship-chandlers	962	57
Shipwrights	128	00
Hire of anchors and chains	150	00
Water	129	00
Running lines	52	00
Pilotage inwards and mooring '04 c. per ton	94	32
Pilotage outwards and unmooring '04 c. per ton	94	32
Anchorage at 38 c. per reg. ton	896	04
Light dues, '09 c. per ton (1st voyage)	212	22
Extra charges for dredger	353	70
Clearing stamps	5	00
Bill of health	5	00
Commission	561	39
Entering at Customs	10	00
Telegrams	32	30
	10,453	11 = £696 17s. 5d.

DIEGO GARCIA.

Diego Garcia, in lat. 7°20' S., long. 72°25' E., is one of the islands of the Chagos Archipelago.

Population.—About 500.

Accommodation.—The best anchorage for a vessel during the S.E. trade is at Minni-Minni Establishment. At this place vessels anchor with the house bearing S.E. or E.S.E., distant $\frac{1}{3}$ of a mile, and a $\frac{1}{4}$ of a mile off the shore reef, in 10 fathoms, sand. The water is perfectly smooth, and boats are able to land on the beach at low water. In the N.W. monsoon, the rainy season, this anchorage is rather a lee shore, and a chopping swell renders landing at times unpleasant. Vessels ought in this season, which is from the middle or beginning of December to the beginning or end of April, to anchor on the west side of the bay, under lee of the land and to point Marianne Establishment, which bears from the centre of Middle Island at the entrance to the natural harbour S. by E., distance $5\frac{1}{2}$ miles.

A shoal bank of sand and coral extends off Point Marianne, $\frac{3}{4}$ of a mile into the bay, close to the edge of which a ship may anchor in 8 or 10 fathoms, soft sand. Port Marianne and the Establishment are known by some high trees of the fir species.

Excellent fresh water can be obtained from wells close to the beach.

Poultry, pigs, and fish are plentiful, and firewood is obtainable. Diego Garcia has now ceased to be a coaling station.

REUNION ISLAND, with its dependency the Comoro Islands.

Réunion, or Bourbon, in lat. $21^{\circ}15'$ S., long. $55^{\circ}30'$ E., is an island belonging to France, about 100 miles S.W. of Mauritius and 420 miles E. of Madagascar. It has an area of 965 square miles and a population of 177,680. A railway 83 miles long connects the chief port, Pointe-des-Galets, with St. Benoit on the east and St. Pierre on the south. Cable service is provided by the Tamatave-Réunion-Mauritius Telegraph Cable, and banking facilities by the Bank of Réunion.

Imports.—Rice, cotton fabrics, wine, petroleum, fat, and oils.

Exports.—Coffee, tobacco, sugar, rum, vanilla, chouchou straw, essences of geranium and ylang ylang.

Accommodation.—The heavy sea which constantly beats on the shore, and the currents, which are very strong and irregular, render the coast very dangerous for shipping. The prevailing winds are from the S.E. and E.S.E., but during the night they generally shift and blow off the land. There is little or no tide, the difference between high and low water rarely exceeding 2 ft., except in cases of hurricane.

Remarkable phenomena, very frequent and much dreaded, on this coast, are the “Raz de Marée”; a heavy surf breaks on the land, whilst in the offing, and even in the roadsteads, the sea is perfectly calm. They appear to occur at very irregular intervals, and have been observed at Saint Denis when the roadstead of St. Suzanne, 20 miles to the eastward, was entirely free from them. They frequently put a stop to all communication between the shipping and the shore for a considerable time. The “Raz de Marée” are often more to be dreaded than hurricanes; on more than one occasion the greater part of the coasting vessels and boats of the island have been destroyed. They appear to be caused by the passage of cyclones at considerable distances, and are particularly prevalent between April and November, the season of strong gales in the latitude of the Cape of Good Hope.

The real scourges of these latitudes, however, are the cyclones, immense whirlwinds which traverse the Indian Ocean, and which may be looked for between January and April. The theory of their circular and transitory movement is now, however, so well understood, that, for vessels well found and with plenty of sea room, comparatively slight danger is to be apprehended; and they give such timely and positive notice of their approach that ships are generally enabled to get to sea before the fury of the gale sets in.

The year may be said to be divided into two seasons, summer and winter; the summer lasts from May to October, and is a dry, cool season. The winter, from November to May, is wet and hot. The mean temperature during the summer is about 22° Centigrade, and in winter about 26° .

Réunion Island.

POINTE-DES-GALET.

Pointe-des-Galets, on the N.W. corner of the island of Réunion, is the principal port.

Accommodation.—This port is safe when once entered, but impossible to enter if there is much sea with a N.W., S.W., or W. wind. It could hold about 8 vessels of 6,000 tons, and has a depth of water of 26 ft. There is a dry dock 114·8 ft. long, and 22·3 ft. wide at the entrance; also a patent slip to raise 400 tons. All minor repairs to vessels can be made. There is a railway in connection with the port, which brings it into communication with nearly all the roadsteads in the island; it runs parallel with the coast three-quarters of the way round the island, from St. Pierre to St. Benoit.

Pilotage.—15 c. per reg. ton.

Port Charges.—**Light Dues** :—20 c. per reg. ton. **Additional Tax** :—15 per cent. on the produce of the pilotage and light dues. **Sanitary Dues** :—15 c. per reg. ton or subscription of 50 c. per reg. ton per year for vessels putting into the same road more than once a month. **Quarantine Dues** :—3 c. per reg. ton per day if required. **Passport and Clearance Dues** :—For foreign ships, passport, 6 fr. per ship; for French ships, clearance, 6 fr. per ship (in the case where the voyage would be for upwards of a year). **Quay Dues** :—*Discharging*—7 fr. 50 c. per ton; reception under tackle, or taken on board with cranes (for goods brought to the docks), 1 fr. 50 c. per ton; reception under tackle, classing for Custom House guard, etc. (for goods not passing through the docks), 2 fr. per ton. *Loading*—Delivery under tackle, sorting, marking, etc., 1 fr. 50 c. per ton. **Tonnage Dues** :—1 fr. 50 c. per reg. ton for vessels loading or discharging exclusively at Pointe-des-Galets. If only part cargo discharged or loaded here, and remainder at another port on the island, then tonnage dues are 2 fr. 50 c. **Towage** :—Sailers, 50 c. per reg. ton up to 300 tons; 25 c. for every ton over the first 300 tons, minimum, 50 fr. These charges are for towage 2 miles from the head of the piers, beyond that by arrangement.

The above charges include entrance and clearance, but they cannot be divided. Steamers, to within half a mile of the piers, entering and leaving, 250 fr. Hire of towing rope, 30 to 100 metres long, 50 fr. per day, for the first two days, 20 fr. per day for following days. **Ballast** :—Delivered on board, 4 fr. per ton. **Water** :—Delivered on board up to 10 cubic metres, 3 fr. per cubic metre; above 10 cubic metres, 2 fr. per cubic metre.

Pro Forma Charges on a steamer of 2,500 reg. tons, with a cargo in, and ballast out, drawing 21 ft. loaded :—

	Fr.	c.
Harbour dues at 1 fr. 50 c. per reg. ton	3,750	00
Pilotage, 15 c. per reg. ton	375	00
Light dues, 20 c. per reg. ton	500	00
Additional tax on the produce of pilotage and light dues	131	25
Sanitary dues	375	00
Stamps	0	15
Boat hire	20	00
Gratuity to pilot	50	00

5,201 40 = £207 7s. 6d.

Réunion Island.

ST. PIERRE.

St. Pierre is on the S. coast of the island of Réunion.

Population.—31,930.

Accommodation.—This port has not been kept up for several years, and would now scarcely be able to receive ships of over 700 reg. tons. There is no longer a careening dock or a shipbuilding yard. There is only one establishment for loading and discharging goods on the roadstead of St. Pierre. There are no tugboats.

Pilotage.—15 c. per reg. ton.

Port Charges.—**Quay Dues** :—7 fr. 50 c. per ton. **Loading and Discharging Dues** :—5 fr. per ton. **Tonnage Dues** :—1 fr. 50 c. per reg. ton, with option of regulating payment on the following basis, viz., 50 c. per reg. ton, and 1 fr. per ton loaded, entering or leaving. Other charges, see **Pointe-des-Galets**.

The principal roadsteads are as follows :—

St. Denis, on the north. Population, 30,000. There are now no organized facilities for loading or discharging.

St. Paul, on the N.W., is situated at the head of a large bay, sandy bottom. Population, 20,100. This is the best roadstead in the island, and loading and discharging can be done here more rapidly than at any other.

St. Leu, on the W.; good roadstead. Population, 8,600. Boating establishment.

St. Rose, on the E. Population, 3,400. This dangerous roadstead still holds its importance, as there is no railway on this part of the island.

Bourbier St. Benoit, on the E. Population, 11,800.

Champ Borne.—Population, 9,200.

Bois Rouge.—Good roadstead.

St. Suzanne, on the N.E. Population, 6,800.

St. Marie, on the N. Population, 6,800.

The cost of loading and discharging on the roads is 7 fr. 50 c. per ton of 1,000 kilos. gross weight. There are still establishments for loading and discharging at St. Paul, St. Leu, St. Marie, and Bois Rouge.

THE COMORO ISLANDS.

The Comoro Islands, lying between Madagascar and the African mainland, are under French protection. The group consists of three principal islands, Great Comoro, Mohilla, and Johanna, with a number of smaller islands. They have a total area of about 600 square miles and a population estimated at 50,000. These islands, with that of Mayotta, are under the jurisdiction of the Governor of Réunion. Sugar and vanilla are successfully cultivated on all the islands, considerable quantities being exported, principally to France.

Reunion Island—The Comoro Islands (continued).

JOHANNA ISLAND.

Johanna Town is in lat. $12^{\circ}10'$ S., long. $44^{\circ}10'$ E., on the N. side of the island of the same name. The town is also known by the name of Moussamoudou.

Exports.—Sugar, coffee, vanilla, etc.

Accommodation.—The anchorage is limited, the best being about three-quarters of a mile W. of the town, in about 6 fathoms of water. During the S.W. monsoon it is considered safe, but in January, during the N.E. monsoon, vessels should be ready to proceed to sea at a moment's notice.

Port Charges.—Whalers are charged 15 dols. a year for any number of visits. Other merchant vessels pay 10 dols. port dues. **Provisions :**—Supplies are plentiful. Cattle, 10 dols. to 15 dols. each; fowls, $1\frac{1}{2}$ dols. a dozen. Sweet potatoes, yams, cocoanuts, and fruit are abundant.

Water :—Free.

Pomony Harbour, in lat. $12^{\circ}30'$ S., long. $44^{\circ}30'$ E., is on the W. side of the island of Johanna.

Accommodation.—The harbour is small but secure, and can accommodate five or six vessels not over 200 ft. long. The best anchorage outside is in 12 fathoms, with the factory chimney on a N.E. by E. bearing.

Excellent water can be had, and a supply of provisions and coal is kept here for the use of the British navy. Cattle and fresh supplies are plentiful.

MAYOTTA ISLAND.

Mayotta Island, in lat. $12^{\circ}50'$ S., long. $45^{\circ}0'$ E., is in the Mozambique Channel. It is a French possession, being administered by the Governor of Réunion, who appoints a Resident Administrator. The island has an area of 140 square miles and a population of a little over 11,500. The climate is very unhealthy.

Imports.—Rice, cattle, guns, powder, cottons, etc.

Exports.—Sugar, coffee, vanilla, etc.

Accommodation.—The island is almost entirely surrounded by coral reefs, with passages through deep enough for vessels of the largest size. The French settlement is on Zaudzi Island, connected by a causeway with Pamanzi Island. There is good anchorage in 11 fathoms on mud.

Pilotage.—There are two Government pilots on the island of Pamanzi, who will come off to vessels if signalled for. They are only useful for the Bandeli Passage.

Fresh water is easily obtained. Poultry, vegetables, and cattle are scarce.

ST. THOMAS and PRINCE'S ISLANDS.

These two islands, lying off the west coast of Africa, belong to Portugal; they constitute a province under the administration of a Governor. They have an area of 430 square miles (St. Thomas 370 square miles, Prince's 60 square miles), with a population of 47,327, of which St. Thomas claims 43,000. The staple products are sugar, coffee, cacao, cotton, tobacco, and cinchona. A railway is being constructed on St. Thomas, where the African Telegraph Company also have a station.

St. Thomas is in lat. $0^{\circ}15' N.$, long. $6^{\circ}35' E.$, and **Prince's** in lat. $1^{\circ}35' N.$, long. $7^{\circ}25' E.$

Imports.—Cloth goods, provisions, dried fish, and wines.

Exports.—Cocoa, coffee, palm kernels, and copra.

Accommodation.—At St. Thomas there is a depth of 9 fathoms at high water, and of 7 fathoms at low water. Steamers anchor in the bay. Cargo is discharged by means of lighters.

Port Charges.—**Harbour Dues** :—50 reis per reg. ton. **Anchor-age Dues** :—9,000 rs. **Sanitary Fees** :—2,600 rs. **Customs Guard** :—2s. **Government Stamp** :—100 rs. **Ballast** :—2,000 rs. per ton. **Brokerage** :—£5. **Tonnage Dues** :—Ocean-going sailing vessels, 100 rs. per reg. ton; ocean-going steamers, 50 rs. per reg. ton; ocean-going steamers making regular calls, 20 rs. per reg. ton. Long distance coasting vessels, 8 rs. per reg. ton; short distance coasting vessels, 200 rs. per reg. ton, payable once in each year, counting from the date of the first payment.

ST. HELENA.

St. Helena, in lat. $16^{\circ}0' S.$, long. $5^{\circ}37' W.$, is an isolated island in the South Atlantic, lying 800 miles S.E. of Ascension and 1,200 miles from the nearest point of the African mainland. It has an area of 47 square miles and a population on December 31, 1907, of 3,746. It is no longer a regular port of call, but the Government, in view of the prevailing distress on the island, have now (1908) reduced the price of water to shipping from 5s. to 2s. per ton, in the hope that more sailing vessels will call for water. The trade is of very little importance, and is all done through the only port, **James Town**, where the anchorage is well sheltered.

Imports.—Sheep, cattle, beer, wines and spirits; coffee, sugar, wheat, hay, rice, coal, ironmongery, etc.

Exports.—Wool, hides, skins, New Zealand fibre, and tow.

Accommodation.—Vessels calling only anchor in from 10 to 40 fathoms, those discharging cargo in from 10 to 15 fathoms.

Masters of vessels arriving here, and intending to remain in the roadstead more than 48 hours, must anchor to the westward of the harbour.

St. Helena.

Steamers bringing mails are admitted to pratique at any time after anchoring, either by day or night.

This is a free port. There are two hand cranes to lift from 3 to 8 tons.

The island is in telegraphic communication with the outer world, and vessels can call for orders.

Port Regulations.—The masters of all ships or vessels must deliver to the Collector of Customs a manifest of all goods shipped for St. Helena, and exhibit the register of the vessel, and report same before bulk is broken, under a penalty of £100.

Masters of vessels are cautioned against the transshipment of goods in these roads.

Port Charges.—Port Dues :—Vessels bringing or taking cargo, 1s. per ton on the cargo shipped or discharged. **Hospital Charges :**—3s. per day per seaman. **Quarantine Fees :**—10s. a day, 20s. a night. **Water :**—Pure spring water, 2s. per ton, supplied direct to the water boats. **Coal :**—Can be supplied to steamers, delivered alongside at 55s. to 60s. per ton, at the rate of 200 tons per day.

British coins are alone received in the Treasury, but all foreign coins are accepted by the merchants at the following rates :—

	s.	d.
The franc of France and Belgium, and the lira of Italy (gold and silver), with proportionate parts, at the rate of	0	9
The guilder and half guilder of Holland, respectively 1s. 6d. and	0	9
The silver rupee of India, with proportionate parts	1	2
The United States gold dollar	4	0
The United States silver "trade dollar"	4	0
The United States silver half and quarter dollar (<i>not</i> "trade dollar") respectively	2s.	and 1 0
All other silver dols.	3	0
Gold dollar of Spain and Philippine Islands	3	6
And the gold doubloon	56	0

Pro Forma Charges on a steamer of 1,775 tons reg., with 1,735 tons coal, and general cargo in and ballast out :—

	£	s.	d.
Harbour dues at 1s. per ton on cargo discharged	86	15	0
Brokerage or agency fee	5	5	0
Labour discharging	50	9	4
Boat hire	5	4	0
Other charges	21	13	4
Fresh provisions	11	16	6
	£181	3	2

THE SEYCHELLES.

The Seychelle Archipelago, which lies about 950 miles north of Mauritius, consists of a group of thirty-four islands. These, with the Amirante Islands, which lie 100 miles to the south-west, are administered as one British Colony; they have a combined area of 153 square miles, with a population estimated at about 23,000. The islands, which are very mountainous, often rising to a height of 3,000 ft. from the sea-level, are in almost every case surrounded by coral reefs. The staple product is cocoanut oil, whilst vanilla is an important culture. Mahe, the principal island, has on the north-east coast—

Port Victoria, lat. 4°30' S., long. 55°30' E.

Population.—About 8,000.

Exports.—Sugar bags, cocoanut oil, etc.

Accommodation.—Port Victoria, the capital of the Seychelles and the seat of Government, possesses a fine, well-sheltered harbour. There is a depth of 13 fathoms in the outer harbour, and of 10 to 10½ fathoms in the inner harbour at high tide. The anchorage is good and safe in all winds. There is no bar.

Pilotage.—Compulsory for the inner harbour. Inwards, to inner harbour, vessels over 201 tons, 8 c. per reg. ton, including making fast to end of Victoria pier, and the same outwards. Vessels entering the inner harbour merely for the purpose of taking coal, provisions, or water, 4 c. per reg. ton, and the same outwards. Vessels under 200 tons, 2 rs. 50 c. per foot draught inwards, and the same outwards. Vessels taking pilot to the outer harbour and not entering the inner harbour—under 500 tons, 15 rs.; over 500 and under 1,500 tons, 20 rs.; over 1,500 tons, 25 rs.

Port Charges.—**Towage**:—Vessels under 100 tons, 25 rs.; from 100 to 200, 30 rs.; from 201 to 400, 15 c. per reg. ton; over 400 tons, 60 rs. for the first 400, and 10 c. per every additional ton.

Anchorage Dues:—Vessels breaking bulk or receiving cargo, 20 c. per ton reg.; Colonial vessels registered in Mauritius or Seychelles, trading with Mauritius or its Dependencies, Madagascar, or Réunion, 7 c. per reg. ton (payable twice a year). Re-mooring or re-anchoring vessel, 20 rs. **Light Dues**:—Vessels entering the inner or outer harbour, or discharging or shipping cargo in the roadstead, 9 c. per ton (payable twice a year).

Water:—50 c. per ton. **Boat Hire**:—5 rs. per day. **Ballast**:—4 rs. per ton. **Labour**:—2 rs. per day.

Pro Forma Charges on a steamer of 2,700 tons reg. entering the inner harbour with a general cargo in and ballast out:—

	Rs.	c.
Harbour dues at 20 c. per reg. ton	540	00
Pilotage in and out	432	00
Light dues	243	00

1,215 00 = £81 0s. 0d.

ZANZIBAR.

The Sultanate of Zanzibar, now a British Protectorate, includes the Islands of Zanzibar and Pemba. The area of the two islands is 1,020 square miles (Zanzibar, 640 square miles; Pemba, 380 square miles), and the population 240,000 (Zanzibar, 180,000; Pemba, 60,000). The total value of the trade in 1907 was £2,303,024: imports, £1,232,957; and exports £1,070,067. On January 1, 1908, the import duties were increased from 5 to 7½ per cent. ad valorem and the duty on distilled liquors from 2rs. (2s. 8d.) to 5 rs. (6s. 8d.) per gallon. A railway from the town of Zanzibar, to cross the island in a northerly direction, is under construction, but so far (1908) it has not been carried beyond Bububu, a point on the coast about 6 miles northward. The Lodge-Muirhead system of wireless telegraphy has been installed between the principal ports of the two islands, a distance of about 68 miles. The telephone system of the town of Zanzibar extends to the more important country districts. The dollar is the unit of value for accounts, but the coin most generally current is the British Indian rupee = 1s. 4d.

New plague regulations were issued in April, 1908, cancelling those issued in October, 1906.

The town is in lat. 6°10' S., long, 39°12' E.

Population.—55,750.

Imports.—Building materials, including cement and corrugated iron roofing, spirits, hardware, nails, screws, soap, and tobacco.

Exports.—Gum, ivory, cocoanut oil, copra, hides, horns, orchilla weed, cloves, clove stems, chillies, cowries, rubber, sesame, and other grains.

Accommodation.—The harbour is divided into the man-of-war anchorage, west of a line drawn N. by W. from the British Consulate, and the merchant vessel anchorage, to the east of this line. Shipmasters are recommended to lie at single anchor at a short distance off shore in preference to mooring close in, so as to avoid the pestilential odours from the town, which are disagreeable and unhealthy, especially during November. No merchant ship can change its berth without the sanction of the port officer. Captains are warned not to anchor over the telegraph cables. The Customs wharf is to be extended so that lighters may discharge alongside at any state of the tide. The anchorage is in the open roadstead in 5 to 10 fathoms of water. The anchorage is well protected by reefs, through which there are four passes, two of them being well buoyed. Vessels load and discharge by lighters. There is a pier belonging to the Government 326 ft. long, which can be reached at high water, ordinary spring tides, by vessels drawing 10 ft.; it is dry alongside at low water. Three cranes to lift 3 tons each; one crane to lift 5 tons.

The Custom House is now kept open until 6.30 p.m. instead of 4.30 p.m. for the transaction of business without payment of overtime. Beyond office hours a charge of 5 rupees is made for opening the office. There is a hospital attached to the French Catholic Mission.

Zanzibar.

Pilotage.—Steamers under 1,000 tons gross reg., 30 rupees ; 1,000 and under 1,500, 40 rs. ; 1,500 tons and under 2,000, 50 rs. ; 2,000 and upwards, 60 rs., inwards, and the same outwards. Sailing vessels under 500 tons gross reg., 30 rs. ; 500 and under 700, 40 rs. ; 700 and under 1,000, 50 rs. ; 1,000 and under 1,300, 60 rs. ; 1,300 and under 1,500, 70 rs. ; 1,500, and upwards 80 rs. On notice being given, the pilot will meet the incoming vessel to the N. of Mangupwani lighthouse, and to the south outside the Southern Buoy. For harbour pilotage—inside the buoys—half the above rates are charged.

Towage :—Steamers or sailing vessels, from the outer buoys to the anchorage, by steam launch, 30 rs. ; by Kilwa or Barawa, 60 rs. From Chumbe or Mangupwani to the anchorage by Kilwa or Barawa 120 rs. Vessels to use their own tow-ropes.

Port Charges.—**Light Dues** :—1 anna per net reg. ton. **Port Dues** :—1 anna per net reg. ton. **Landing Charges** :—5s. per ton. **Labour** :—Coolie hire, men, 10 annas per day ; women, 6 annas per day. **Water** :—2s. per ton. **Ballast** :—1 rupee per ton. **Provisions, etc.** :—Beef and mutton, 4 to 6 annas per lb. ; fowls, 8 annas each. Yams and sweet potatoes moderately cheap. **Bill of Health and Port Clearance** :—10 rs. **Hire of Government Buoy** :—Regular contract, per month 60 rs. ; each time 15 rs.

Part III.

AMERICA.

North America.

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NORTH AMERICA.

BERMUDAS.

The island of Bermuda, together with a large number of small islands of which only about twenty are inhabited, constitute the British Colony of the Bermudas. These islands have a total area of 20 square miles and a population of about 18,000. The principal island, Bermuda, lies low, the highest land not being much over 200 ft. high, with a coral reef on the western, northern, and north-eastern sides, extending some 7 to 8 miles from land, ending in ocean water. By their connection with the Halifax and West Indies cables, the islands have been placed in direct communication with almost every part of the world, and have therefore become quite a port of call for steamships leaving England, or European ports, seeking freights from American or Dominion ports, thus giving owners, whilst their ships are crossing the Atlantic, considerable additional time in which to arrange charters, and enable ships to be ordered from Bermuda direct to their loading port, thereby saving both expense and delay.

The position of the islands is marked by two lighthouses in Bermuda. One at Gibbs' Hill, W. end, in lat. $32^{\circ} 10' 04''$ N., long. $64^{\circ} 53' 36''$ W., is a revolving light of the first order, visible from 25 to 30 nautical miles; it gives a flash of eight-tenths of a second every ten seconds, and is amongst the largest and most powerful in the world. The other, on St. David's Island, E. end, in lat. $32^{\circ} 21' 42''$ N., long. $64^{\circ} 38' 41''$ W., is a fixed white light of the second order, visible at a distance of about 20 nautical miles.

Ships bound to Bermuda or calling for orders should always endeavour to make the S. side of the islands, or St. David's lighthouse. The S. side of the islands lies E.N.E. and W.S.W. To the W. side of the islands, the latitude should not be crossed to the E. of long. $65^{\circ} 05'$ W. Gibbs' Hill lighthouse brought to bear N.E. by N. can be approached to within about 4 miles. When Gibbs' Hill lighthouse bears N., the S. side of the island can be approached without danger to within 3 miles. The latitude to the E. of the island should not be crossed to the W. of $64^{\circ} 30'$ long. When St. David's light bears W. by S. it can be approached without danger to within 2 miles of the shore.

The domestic trade of the colony is not large, the annual value being not more than £550,000, of which about £410,600 is represented by imports consisting of food stuffs, textiles, and general merchandise; the principal exports being onions, potatoes, arrowroot, lily bulbs, and vegetables.

The currency and weights and measures are the same as those in use in the United Kingdom, but silver is legal tender up to any amount. There are two banks, the Bank of Bermuda, Ltd., and Messrs. Butterfield & Son, Ltd. The head office of both these institutions is at Hamilton; the first named have a branch at St. George's.

Pilotage.—Pilotage is compulsory both inwards and outwards, except outwards when calling for orders only. Rates : Under 8 ft., £4 16s.

Bermudas.

inwards ; £2 6s. outwards. Over 8 ft., 12s. per foot inwards, and 6s. per foot outwards.

Lighthouse Dues.—Vessels carrying H.M. mails under any contract with Imperial or Colonial Government, and vessels laying or repairing submarine cables under contract with H.M. Government, $\frac{3}{4}d.$ per ton net. Vessels calling for orders only, or for coal and provisions for ship's use, or for landing sick or disabled or injured persons, and not taking on board or discharging cargo, or landing or taking on board any passenger, when compelled to do so by any Quarantine Act or the Imperial Merchant Shipping Act, or by reason of sickness on board, $\frac{1}{2}d.$ per ton net. Vessels calling periodically and not less often than once a month to land or take on board passengers and freight, $2d.$ per ton net. On all vessels not exempted by law, $3d.$ per ton net. Pleasure yachts and some other classes of vessels are exempted. Bermuda, besides offering facilities for repairs and docking, is a good coaling station, and being within 6 days towing distance of Halifax, Boston, New York, Philadelphia, and Norfolk, must always be a place of resort for disabled ships in the Western North Atlantic.

HAMILTON.

Hamilton is the chief town of the Bermudas, in lat. $32^{\circ}15' N.$, long. $64^{\circ}47' W.$

Population.—About 2,500.

Imports.—General merchandise.

Exports.—Onions, potatoes, arrowroot, lily bulbs, and green vegetables.

Accommodation.—The channel leading into Hamilton harbour is well buoyed, black buoys on starboard and chequered on port, entering. 22 ft. may be taken into Hamilton at high water. The rise and fall of the tide is from 3 to 4 ft., but irregular. The holding ground is good, clear bottom, tough mud. The quay is 16,000 ft. long, with 13 ft. close to at high tide ; 10 ft. away the water is much deeper. There are coal depots at Hamilton, and ships drawing up to 22 ft. may coal at the wharf, where good despatch is given. Warehouse accommodation is very limited. There is communication by Halifax and Bermuda cable, and by mail steamers to New York, Halifax and West Indies. There is a dry dock at H.M. Dockyard, capable of lifting a battleship.

Pilotage.—Compulsory, both inwards and outwards, except outwards when calling only for orders. Rates : Under 8 ft., £4 16s. inwards ; outwards, £2 8s. Over 8 ft., 12s. per foot inwards, and 6s. per foot outwards.

Port Charges.—**Lighthouse Dues** :—Vessels calling for orders only, or for coal and provisions for ship's use, and not loading or discharging cargo, $\frac{1}{2}d.$ per ton. Vessels calling periodically and not less than once a month to load or discharge cargo, $2d.$ per ton net. All vessels not exempted by law, $3d.$ per ton net. **Wharfage** :—Steamers, $\frac{1}{2}d.$ per ton gross for the first 72 hours, and after that period $\frac{1}{4}d.$ per ton, with a minimum rate of £3 per day. Sailing vessels, $1d.$ per gross ton per day of 24 hours, with a minimum rate of 10s. per day. **Discharging** :—Puncheons and hogsheads, $6d.$ Barrels of flour, etc., $2d.$ Lumber, $1s.$ per 1,000 foot on shore, and $2s. 6d.$ on the wharves.

Bermudas.

ST. GEORGE'S.

St. George's is the second town in importance of the Bermudas, in lat. 32°25' N., long. 64°40' W., and is situated on an island of the same name.

Imports.—General merchandise.

Exports.—Onions, potatoes, arrowroot, lily bulbs, and green vegetables.

Accommodation.—The channel leading to St. George's harbour is well buoyed, and there is a depth of about 20 ft. at high tide. Murray's Anchorage, at the E. end, very near the town of St. George's, is where all large merchant steamers are anchored, requiring bunker coal. There is a patent slip capable of accommodating vessels of about 1,200 tons, and all ordinary repairs can be effected to steamers and other vessels. The harbours are land-locked. Vessels discharge alongside a stone wharf. Nearly all the wharves are private property, the charge for wharfage being according to agreement. There are coal depots at St. George's, and vessels drawing up to 10 ft. may coal from the wharf. Steamship communication is maintained with New York, St. John (N.B.), and Halifax.

Pilotage.—Inwards, 12s. per foot; outwards, 6s. per foot.

Port Charges.—**Harbour-master's Fee:**—1d. per ton for vessels up to 200 tons; over 200 tons, $\frac{1}{2}$ d. per reg. ton. **Light Dues:**—See **Hamilton.** (Vessels calling for orders may remain under steam or sail, St. David's Light bearing W. to N.W. about 3 miles, and communicate by signal with agents, who send off orders by boat at a charge of about £4. By so doing, neither pilotage nor light dues are incurred.)

Pro Forma Charges on a steamer of 936 net tons, with 1,491 tons of coal from Cardiff, and sailing in ballast for Baracoa (Cuba):—

	£	s.	d.
Light dues	11	14	0
Wharfage whilst discharging	5	12	0
Telegram to Haugesund on arrival	0	10	9
Stevedore discharging 1,491 tons coal at 1s.	74	11	0
Harbour master	2	7	4
Revenue officer, overtime	1	3	9
Postage, etc.	0	6	0
Pilotage from sea to St. George's, 18½ ft. at 12s.	11	2	0
„ „ St. George's to sea, 13 ft. at 6s.	3	18	0
Pilot, 1 day detention	0	10	0
Cablegram to Norway on sailing	0	10	9
Entering and clearing at Customs	3	3	0
American Consul, bill of health and certificates to manifest and crew list, 9 dols.	1	17	6
	£117	6	1

CANADA.

The territories which constitute the Dominion of Canada comprise all that portion of America lying north of the United States, with the exception of Newfoundland, Labrador, and Alaska. The Dominion has a total area of 3,745,574 square miles, and a population, according to the last census (1901), of 5,371,315.

Commerce.—The domestic trade of the territories forming the Dominion for the year ended March 31, 1908, was valued at £133,700,000, made up of imports £76,200,000, and exports £57,500,000. The Customs tariff, under which more than half of the revenue of Canada is derived, is based upon a frankly protective basis, but there is a preferential tariff in favour of the United Kingdom, India, Ceylon, the Straits Settlements, West Indies, Bermuda, British Guiana, New Zealand, Cape Colony, Natal, Orange River Colony, Transvaal, Rhodesia, and such other British Colonies as may enter into reciprocal agreements with the Dominion Government.

On January 13, 1908, an order was passed by the Dominion Council restricting the coasting trade of Canada to British vessels as from January 1, 1909. Application having been made to allow the ships and vessels of certain foreign countries to participate in the Canadian coasting trade to a limited extent, and for a temporary period, pending the acquisition of suitable British ships, the Governor-General has ordered that the Order in Council of January 13, 1908, shall be amended in such manner as to permit steamships of not less than 1,500 tons gross tonnage each of Italy, Germany, the Netherlands, Sweden, Norway, Austria-Hungary, Denmark, Belgium, the Argentine Republic, and Japan to engage in the coasting trade of Canada in the carrying of goods and passengers coastwise between any port in the province of Nova Scotia and any port in the province of Quebec, and vice versa, on the same terms and conditions as are applicable to Canadian vessels, until December 31, 1911.

Mercantile Marine.—The commercial navy of Canada has a total tonnage of 663,415 tons, made up of 2,811 steamers of 225,625 tons, and 4,705 sailing ships of 437,790 tons.

Internal Communications.—The great rivers and lakes of Canada, interconnected as they are by canals, form an unrivalled system of inland navigation, and, being navigable over a great distance by ocean-going steamers, provide a splendid means of access from the coast to the interior. Since the St. Lawrence river was dredged, great ocean liners steam in through the Straits of Belle Isle, past Cape Whittle, West Point, Father Point, Rimouski, Bic, Isle Verte, Quebec, and Three Rivers, on to their berths in the docks at Montreal, 994½ miles from the entrance of the Gulf of St. Lawrence. Here they can receive from the great elevators grain cargo at the rate of 15,000 bushels per hour. Above Montreal the canals facilitate further navigation by large vessels. Vessels drawing not more than 14 ft. can, in fact, proceed by the through route from Montreal to the head of Lake Superior and receive cargo direct at Port Arthur. This through route is as follows :—

Canada.

	Miles.
Lachine Canal	8½
Lake St. Louis and River St. Lawrence	16
Soulanges Canal	14
Lake St. Francis and River St. Lawrence	33
Cornwall Canal	11
River St. Lawrence	5
Farrans Point Canal	1½
River St. Lawrence	10
Rapide Plat Canal	3½
River St. Lawrence	4
Galops Canal	7½
River St. Lawrence and Lake Ontario	236
Welland Canal	26½
Lake Erie, Detroit River, Lake St. Clair, and Lake Huron, etc.	580
Sault Ste. Marie Canal	1½
Lake Superior to Port Arthur	266
	<hr/>
	1,224½

Following the same route vessels can also reach the United States port, Duluth (1,357 miles), or, by passing direct from Lake Huron to Lake Michigan proceed to the harbour at Chicago (1,286 miles) or Milwaukee. The number of locks through which a vessel would pass in its passage from Montreal, at the head of ocean navigation, to the head of Lake Superior is 48, the total height to be directly overcome by this means being 551 ft. It is important to note that the enlargement of the canals on the main route between Montreal and Lake Erie comprises locks of the following minimum dimensions : Length, 270 ft. ; width, 45 ft. ; depth of water on sills, 14 ft. The size of vessels to be accommodated is limited to a length of 255 ft. ; a beam of about 43½ ft. At Farrans, in the canal of that name, the lock is 800 ft. long. A similar lock is built at Iroquois, on the Galops Canal, the object being to pass a full tow at one lockage.

The Montreal, Ottawa, and Kingston Canal route extends from the harbour of Montreal to the port of Kingston, passing through the Lachine Canal, the navigation section of the lower river Ottawa and the Ottawa canals, to the city of Ottawa ; thence by the River Rideau and the Rideau Canal to Kingston on Lake Ontario—a distance of 245 miles. The total lockage (not including that of the Lachine canal) is 509 ft. (345 ft. rise, 164 ft. fall), and the number of locks to be negotiated 55.

There is a branch on this system, the Perth branch, which affords communication between Beveridge's Bay, on Lake Rideau, and the town of Perth.

The Richelieu and Lake Champlain is another system. Commencing at Sorel, at the confluence of the rivers St. Lawrence and Richelieu, 46 miles below Montreal, this route extends along the river Richelieu, through the St. Ours lock to the basin of Chambly ; thence by the Chambly Canal to St. Johns, and up the river Richelieu to Lake Champlain. The distance from Sorel to the Canada-United States boundary line is 81 miles, and from thence to the Champlain canal 111 miles. By following this canal to its junction with the Erie Canal, and the latter until it enters the Hudson River, direct communication is opened up between Montreal and New York, a distance of 457 miles.

The term "Trent Canal" is applied to a series of water stretches extending from Trenton at the mouth of the River Trent, on the Bay of Quinte, Lake Ontario, to Lake Huron. These do not, however, form a connected system of navigation, and in their present condition are efficient only for local use. By means of various works this local use is being extended and,

Canada.

by others now in progress and in contemplation, the system will become a through route between Lake Ontario and Lake Huron.

The St. Peter's Canal connects St. Peter's Bay, on the northern side of Cape Breton, Nova Scotia, with Bras d'Or lakes. It crosses an isthmus half a mile in width and gives access to the Atlantic. The length of this canal is 2,400 ft., with a width at the water line of 50 ft., and a mean depth of 19 ft. The rise and fall of the tide in St. Peter's Bay is 4 ft. There is one tidal lock 200 ft. long by 48 ft. wide, with 18 ft. of water on the sill at lowest tides.

Since the opening of the Soulanges canal for navigation the Beauharnois Canal, which connects the St. Lawrence River below the Cascade rapids with Lake St. Francis, has been practically abandoned.

The proposal to construct the Georgian Bay Ship Canal has been revived, and Sir Wilfred Laurier (speaking at Hull, Ontario, on October 19, 1908) promised that, if the country's revenue continued to increase at its present rate, the work should be taken in hand as soon as the Trans-Continental Railway was completed. The proposed route is from Montreal along the Ottawa River to Lake Nipissing and down the French River to Georgian Bay. This would supply the shortest and quickest possible waterway down which to bring the grain from the West to the head of ocean navigation, Montreal. It is claimed for this route that, beside effecting a saving in time of from one and three-fifths to two days in the journey from the head of the lakes to an ocean port, it would have a further advantage in that boats of very much larger capacity would be enabled to pass through the locks to be constructed than is possible in the case of those on the existing route.

During 1906, 32,817 vessels of 11,211,636 tons passed through the Canadian Canals, carrying 256,500 passengers and 10,523,185 tons of freight, chiefly iron ore, grain, timber, and coal.

The Canadian canals are free of all tolls.

At the close of the year 1907 the Canadian railways had a total length of 23,266 miles, steam railways 22,452 miles, electric railways 814 miles. The principal line of this system is the Canadian Pacific, which joins the Atlantic, at Halifax, with the Pacific, at Vancouver. This railway—one of the largest organizations of its kind in the world—has more than 10,000 miles of line in operation, a revenue of \$70,000,000 per annum, a great subsidiary steamship system reaching out to Europe and Asia, and opportunities for expansion on land, and extension of connection by sea, to which it is difficult to fix a limit. Another connecting link between the two oceans is contemplated by the construction of the Grand Trunk Pacific, which will run parallel with the Canadian Pacific from Halifax, Nova Scotia, to the port of Prince Rupert in British Columbia; connecting links between the two systems being provided as experience may prove they are required. In seven provinces out of nine of the Dominion, the work is being pushed on with all the energy that can be thrown into it by the Dominion Government itself and the powerful Grand Trunk Corporation; the latter backed up by public guarantees, which secure to it all the capital it requires. Nearly 1,000 miles of the prairie portion have (1908) been completed. In addition to what has been accomplished by these organizations, a great work in the direction of supplying quick and efficient rail transport has been carried out by private and municipal enterprise. The greatest of these privately owned systems is that of the Canadian Northern railway, which has over 5,000

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miles of line open for public traffic. This Corporation own and operate the line from Port Arthur to Winnipeg and thence to Edmonton—nearly 1,300 miles. From Edmonton it is being pushed forward toward the foothills of the Rockies. A parallel northern section runs from Dauphin to Prince Albert—350 miles—while a section to the south, of about 600 miles in all, extends first westward from Winnipeg to Regina, and then curves northward to Prince Albert. The whole mileage westward of Port Arthur is 3,390. East of the Great Lakes a line 367 miles long penetrates New Ontario as far as Garnier, and connects Georgian Bay at Falding with Toronto, while about 450 miles have been completed in the province of Quebec. The Company also work some 430 miles of line in Nova Scotia and Cape Breton. There are also a number of short local lines at work, all bringing Canadian produce to the ports, or acting as feeders to the great trunk lines, by which it is in turn conveyed from the interior to the lake and coast ports.

The post, telegraph, and telephone systems are all highly developed.

Currency, Weights and Measures.—There is a uniform system of currency for the whole Dominion of Canada, the denomination of money being dollars and cents. The Dominion has no gold coins of her own, but those of Great Britain and the United States are current. British silver coins have legal currency at the following rates :—

s.	d.	dols.	cents.
5	0	1	20
2	6		60
2	0		48
1	0		24
0	6		12

The British sovereign=4 dols. 86 cents.

The Government issues notes for 4, 2, and 1 dollars and 25 cents, the ordinary banks not being allowed to issue notes for a sum of less than 5 dollars. The weights and measures are the same as those of Great Britain, but the metrical system is legal as between parties.

General Shipping Charges.—Harbour-master's Fees for ports in the provinces of Nova Scotia, New Brunswick, Quebec, Ontario, British Columbia, and Prince Edward Island :—

Vessels of	50 to 100 tons register	Dols.	c.
"	101 " 200	1	00
"	201 " 300	1	50
"	301 " 400	2	00
"	401 " 500	2	50
"	501 " 700	3	00
"	701 and upwards	4	00
		5	00

Hospital Dues are a governmental tax of 2 cents per ton reg., levied three times a year on vessels trading with the Dominion, in return for which free medical and surgical treatment is given to every sick mariner in numerous hospitals, some of which are owned and others subsidized by Government.

There are no **Light Dues** levied at any port in Canada, the entire light-house and buoy service of the Dominion being maintained at the expense of the general revenues of the country as a free gift to commerce.

Emigration.—There are no regulations affecting steamship owners.

Immigration.—All transport companies, or other persons, carrying immigrants from any country into Canada must, on the demand of the Superintendent of Immigration, deport to the country from whence he was

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brought, any immigrant prohibited from being landed in the Dominion, or any person who, within a period of two years, shall have been conveyed by such transportation company, and who shall, by order of the authorities, be ordered for deportation. Acting under the authority of the Minister of the Interior, the Immigration Agent, medical officer, or any other duly appointed officer may act as a board of inquiry at any port of entry, to consider and decide upon the case of any immigrant seeking admission into Canada. The regulations provide that no immigrant will be permitted to land in Canada who is feeble-minded, an idiot, or an epileptic, or is insane or has had an attack of insanity within five years; nor will any immigrant be so landed who is deaf and dumb, or dumb, blind, or infirm, unless he belongs to a family who accompany him, or are already in Canada. No immigrant will be admitted who is afflicted with a loathsome disease, or with a disease which is contagious or infectious, and which may become dangerous to the public health or widely disseminated; nor one who is a pauper, or destitute, a professional beggar, or vagrant, or who is likely to become a public charge. No immigrant will be permitted to land who has been convicted of a crime involving moral turpitude, or who is a prostitute, or who procures, or brings or attempts to bring into Canada prostitutes or women for purposes of prostitution. Every immigrant deported shall be carried by the same transportation company or companies which brought him into Canada to the port from which he came to Canada, without receiving any payment for such carriage.

ANNAPOLIS ROYAL.

Annapolis Royal, in lat. $44^{\circ}45'$ N., long. $65^{\circ}26'$ W., is about 12 miles from Digby Gut.

Population.—1,200.

Exports.—Apples, potatoes, lumber, deals, timber, fire-wood, fish, and farm produce.

Accommodation.—The mouth of the river on which Annapolis stands is Digby Gut; the shores of the Gut are bold. The port is easy of access in all weathers, and is a natural landlocked harbour, about 6 miles long, varying in width from $\frac{1}{2}$ to $1\frac{1}{2}$ miles. Depth of water, 6 to 7 fathoms at high tide. Ships may anchor anywhere, but the best anchorage is in 7 fathoms on good holding ground, in the centre of the harbour. The rise and fall of tide is 30 ft. Moorings are good, either alongside or at the end of the wharves. There are good piers for unloading at all times of the tide, with sufficient water for ships of any size.

Spars can be procured and repairs done cheaply. Cargoes are delivered alongside the wharf, receivers of cargo paying wharfage.

Supplies of all kinds can be procured. Water, of good quality, is plentiful, and can be obtained from the waterworks at the wharves. Coal can be obtained in small quantities.

Pilotage.—Optional. Pilots can be had off the harbour. The channel is well buoyed and lighted, so that strangers can employ local fishermen as pilots.

Port Charges.—**Harbour-master's Fees:**—Nominal. **Hospital Dues:**—2 c. per reg. ton. **Stone Ballast:**—Delivered alongside at 50 c. per ton. **Stevedore:**—2 dols. per day. **Labour:**—1 dol. to 1 dol. 50 c. per day.

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ARICHAT.

Arichat, in lat. $45^{\circ}30'$ N., long. $61^{\circ}0'$ W., is situated on Madame Island, immediately S. of Cape Breton Island.

Population.—2,000.

Export.—Cured fish.

Accommodation.—The harbour is spacious and secure, and capable of containing any number of large vessels. There are numerous wharves with 18 ft. of water close to. Springs rise 5 ft.; neaps 4 ft. There is 9 fathoms at the anchorage.

BATHURST.

Bathurst, in lat. $47^{\circ}36'$ N., long. $65^{\circ}42'$ W., is situated on Bathurst Harbour.

Population.—2,000.

Exports.—Deals, timber, and fish.

Accommodation.—Vessels of 7 ft. draught can reach the town at low water, and those of $12\frac{1}{2}$ ft. can, at high water springs, come to the wharves; there are several places where vessels can lie afloat in 12 ft. at low water. The bar is about 5 miles from the town. The anchorage outside the bar is safe for vessels of any size, in $5\frac{1}{2}$ fathoms; the bottom is hard clay. The entrance of the harbour is about 2 cables wide between Caron and Alston Points. There are two beacons on Caron Point, which, when kept in one, lead in through the channel over the bar. A pilot should always be used.

Tugboat can be had. Water pumped direct into ship's tank at a moderate charge. Provisions and ships' stores, and outfit of every description, can be procured, and vessels repaired cheaply.

Pilotage.—Sailing Vessels:—1 dol. 20 c. per ft. in, and 80 c. per ft. out. **Steamers:**—An additional 1 c. per ton inwards only.

Port Charges.—No harbour dues. **Harbour-master's Fee:**—50 c. to 5 dols., according to size of vessel. **Sick Mariners' Fund:**—2 c. per ton. **Stevedore:**—90 c. to 1 dol. per standard. **Shipbroker:**—Entrance and clearance at Customs, 10 dols. **Water:**—1 c. per gallon. **Commission:**— $2\frac{1}{2}$ per cent.

Pro Forma Charges on a steamer of 2,060 tons reg., loaded with 1,675 standards, outside the bar:—

	Dols. c.
Customs entries, in and out	10 00
Sick Mariners' Fund at 2 c. per ton	41 20
Harbour-master	5 00
Pilotage inwards, 13 ft. at 1 dol. 20 c.	15 60
" outwards, 20 ft. at 80 c.	16 00
" inwards, additional (steamer)	20 60
Loading 1,675 standards at 1 dol. per standard	1,675 00
Provisions, as per bill	59 91
Butchers	20 64
Winchmen, 15 days	22 50
Labour, removing coal	6 80
Water, 2,000 gallons	20 00
Commission, $2\frac{1}{2}$ per cent. on 1,913 dols. 25 c.	47 83

1,961 08 = £403 10s. 3d.

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BAYFIELD.

Bayfield is in lat. $46^{\circ}9' N.$, long. $63^{\circ}49' W.$

Population.—300.

Exports.—Cattle, fish, and farm produce.

Accommodation.—The harbour has a water area of about 800 acres, with a depth at the entrance at ordinary high springs of 24 ft., and at ordinary neaps of 22 ft. The depth in the port at ordinary high springs is 22 ft., and at ordinary low springs 17 ft. There is 200 ft. of quayage with 15 ft. alongside at ordinary high springs, and 10 ft. at ordinary low springs. The Dominion Government wharf is 380 ft. long, and can be reached by vessels drawing not more than 14 ft.

Pilotage.—Not compulsory.

Port Charges.—**Wharfrage**:—20 c. each for small vessels. **Entrance Fees**:—50 c. **Clearance Fees**:—50 c. **Ballast**:—2 dols per ton. **Labour**:—1 dol. 50 c. per day. **Harbour Dues**:—1 c. per ton.

BAY VERTE.

Bay Verte is in lat. $46^{\circ}0' N.$, long. $64^{\circ}0' W.$ This port is now of no interest to shippers.

BERSIMIS RIVER.

The mouth of the Bersimis River is in lat. $48^{\circ}55' N.$, long. $68^{\circ}40' W.$

There is now no harbour of any consequence, and no vessels of any size can enter and be kept afloat during low water.

BRIDGEWATER.

Bridgewater, in lat. $44^{\circ}22' N.$, long. $64^{\circ}31' W.$, is about 15 miles from the mouth of Le Have River.

Imports.—General merchandise and coal.

Exports.—Deals and lumber.

Accommodation.—Vessels are sometimes compelled to lay outside for a day or two, owing to the fog. The bar inside of Moser's Island has 19 ft. of water at neaps, and 21 ft. at spring tides. Vessels can load here to 16 ft., but the navigation for three miles below is rather intricate, so that vessels of greater draught usually load at Summerside Mills, about that distance from Bridgewater, and lie safely alongside the wharf. If drawing more than 16 ft., vessels must load off the wharf, in the channel, where there is 24 ft. of water. The bottom is soft mud. Cargo is put alongside at the shippers' expense. There is 21 ft. of water on the bar at high water springs.

At Gretson's Point, near the entrance, is a telephone station in connection with the telegraph system. This, with the fact that vessels can always find good anchorage in Moser's Harbour, at the mouth of the river, or in the roadstead outside the bar, makes this one of the best ports of call on the south coast of Nova Scotia. Ships calling here have also a chance of obtaining a charter on the spot, from 25 to 30 million ft. of lumber being exported annually. The best anchorage in the roadstead is about $\frac{1}{4}$ mile N.W. from Western Spectacle Island, in from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms, on good holding ground.

The river is at present being dredged and will be deepened some 10 ft.

Canada—Bridgewater (continued).

Pilotage.—There are no regular pilots, but a fisherman can always be had by hoisting the usual signal off Ironbound Island, at the mouth of the river. Charge for a vessel of 888 tons reg., drawing $20\frac{1}{2}$ ft., £3.

Port Charges.—**Labour** :—5s. a day. **Stevedore** :—6s. **Steam-tug** :—According to the size of the vessel, from 5 to 35 dols. **Reporting and Clearing at the Customs** :—1 dol. **Hospital Dues** :—2 c. per reg. ton. Cargo can be stowed at about 35 to 40 c. per 1,000 superficial ft. **Harbour-master's Fees** :—1 to 5 dols. **Ballast** :—Discharged on the wharves free of landing charges. **Fresh Water and Provisions** :—Plentiful and cheap.

BUCTOUCHE.

Buctouche is in lat. $46^{\circ}28'$ N., long. $64^{\circ}44'$ W.

Population.—1,000.

Import.—Salt.

Exports.—Timber, deals, tan bark, oysters, potatoes, etc.

Accommodation.—Buctouche Road, outside the bar, is a safe anchorage for vessels of too great a draught to cross the bar; and, as 12 ft. 6 in. is as much as can be safely carried over the bar at ordinary spring tides, it is here that vessels, above that draught, complete loading, being well sheltered except from S.E. winds. The bottom is stiff clay, and vessels with good anchors and cables are quite safe. The bar consists of two shoal patches, of about 150 ft. across, bottom of flat rock and sand. The channel is marked by a buoy. Vessels able to cross the bar can proceed 10 miles up the river. The town of Buctouche is about 2 miles within the mouth of the river. The shore is low, and covered with bushes, spruce, etc. The village, off which vessels usually load, is about six miles inside the bar. The channel inside is narrow and crooked, requiring a fair wind to enter. Ballast can be discharged at the ballast or mill wharf.

Shipbuilding is carried on here, and repairs to vessels can be effected. A barge of about 100 to 200 tons and two tow-boats are available.

Pilotage.—Compulsory. 1 dol. 50 c. per foot draught, in and out. Pilots come off as soon as a vessel is in sight.

Port Charges.—**Sick Mariners' Fund** :—2 c. per reg. ton. **Harbour-master's Fees** :—From 50 c. to 5 dols., according to the tonnage of the vessel. **Wharfage** :—1 dol. 50 c. per day. **Stevedore** :—1 dol. per standard. (This includes loading in the roads when necessary.) **Towage** :—Two tow-boats can be had for about 25 dols. per day. **Labour** :—From 1 dol. 75 c. to 2 dols. per day.

Pro Forma Charges on a vessel of about 500 reg. tons, loading deals :—

	Dols.	c.
Sick Mariners' fund	10	00
Hoisting ballast	5	00
Pilotage	36	00
6 days' wharfage	9	00
Harbour dues	4	00
Towage in and out	50	00
Stowing $221\frac{1}{4}$ stds. deals	221	25
Water	4	00

339 25 = £69 16s. 2d.

Canada.**CANSO.**

Canso is in lat. $45^{\circ}20'$ N., long. $60^{\circ}58'$ W.

Population.—About 2,000.

Imports.—Salt and general merchandise.

Exports.—Fish and fish products.

Accommodation.—The anchorage off the wharves is quite secure, and there is sufficient water for vessels of the largest draught. The place has become a rendezvous for the fishing fleets of the United States and Canada, and bait, ice, and other supplies are furnished to them here in considerable quantities and at reasonable rates; there are also facilities here for the transshipment of cargo.

The water is good. An abundant supply of coal can be obtained. Tugs to be had at reasonable rates.

Pilotage.—Not compulsory.

Port Charges.—Harbour Dues :—

				Dols. c.	
For vessels up to 50 tons	.	.	.	0	50
" over 50 tons and not over 100	.	.	.	1	00
" " 100 " " 200	.	.	.	1	50
" " 200 " " 300	.	.	.	2	00
" " 300 " " 400	.	.	.	2	50
" " 400 " " 500	.	.	.	3	00
" " 500 " " 700	.	.	.	4	00
" from 700 tons upwards	.	.	.	5	00

Custom House Fees :—Nominal. **Ballast** :—35 c. per ton.

CAPE ST. IGNACE.

Cape St. Ignace, in lat. $47^{\circ}3'$ N., long. $70^{\circ}25'$ W., is about 34 miles below Quebec.

This is a good place to load at during summer. The anchorage is about 2 miles off shore, in 4 to 5 fathoms.

CAPE TORMENTINE.

Cape Tormentine Breakwater is about 10 miles from Shemogue.

Export.—Timber.

Accommodation.—This is a safe harbour. There is a wharf here belonging to the Government, alongside which vessels can load up to 20 ft. There are berths for four sailing vessels or for one steamer.

Pilotage.—Compulsory. 1 dol. 50 c. per foot.

Port Charges.—**Sick Mariners' Fund** :—2 c. per reg. ton. **Harbour-master's Fee** :—Same as other Canadian ports. **Stevedoring** :—80 to 90 c. per standard.

Provisions :—Cheap.

CARAQUET.

Caraquet, in lat. $47^{\circ}46'$ N., long. $64^{\circ}56'$ W., is 40 miles from Bathurst.

Population.—6,000.

Imports.—General dry goods, tea, sugar, molasses, salt, etc.

Exports.—Dry and salt fish and lumber.

Accommodation.—This harbour affords very good shelter to

Canada—Caraget (continued).

ships, and dredging is to be done next (1910) season, enabling vessels of large tonnage to enter. There is 1,200 ft. of quayage, including the break-water, having a depth alongside of 20 ft. at high water, and 14 ft. at low water. The Dominion Government have also built another wharf, about a mile further west, which is 1,700 ft. long, and has 20 ft. of water at the end at low water, and 25 ft. at high water ordinary spring tides.

Pilotage.—Compulsory for vessels over 80 tons. **Steamers and Sailing Vessels:**—1 dol. 25 c. per foot draught inwards, and 1 dol. per foot outwards. **Harbour Pilotage:**—4 dols. for each move.

Port Charges.—**Light Dues:**—2 c. per ton. **Clearance Fees:**—Vessels under 100 tons, 50 c. From 100 to 200 tons, 1 dol. **Ballast:**—Free; cartage only to be paid for. **Labour:**—1 dol. 25 c. per day of 10 hrs. **Brokerage:**—None; papers made out by Customs officer.

CASCUMPEQUE HARBOUR.

Cascumpeque Harbour, in lat. 46°40' N., long. 64°3' W., is on the N. side of Prince Edward Island.

Accommodation.—The breadth of the bar is about 100 ft., and the channel is about 100 yards wide; depth on the bar, 10½ ft. at low water, 12½ ft. at high water ordinary neap tides. Rise and fall, 4 ft. springs, 2 ft. neaps. During heavy easterly winds the sea breaks heavily on the bar, and shipping cannot enter. Good anchorage, on clay bottom, all over the harbour, in 4 to 5 fathoms, except just inside the heads, where there is a rocky ledge with about 14 ft. at half tide; good anchorage outside the bar also. The harbour closes from December 15 to 20, and opens in April, but sea ice often blocks the harbour until late in May, and particularly so if easterly winds prevail at this season.

Pilotage.—Compulsory, in, over 80 tons, 1 dol. per ft.; 80 tons and under, 1 dol. 25 c. per ft.; out, 80 c. per ft. under 250 tons, and 1 dol. per ft. of 250 tons and over.

Vessels wanting pilots have no difficulty, unless approaching the harbour with easterly winds, which is not safe at night, or when the weather is bad. In clear weather vessels can come to anchor by the light. All small vessels can make the harbour by the range lights inside. The course from outside the buoy to the wharf is made by keeping the lights in range.

Port Charges.—**Harbour-master's and Port-warden's Fees:**—See **Charlotte Town.** **Wharfage:**—Free at the railway, if cargo is landed or received from the railway. **Ballast:**—Stone, not always obtainable, 30 to 40 c. per ton; for sand no charge, except cartage from the beach. Single teams, 1 dol. 80 c. to 2 dols. per day. **Labour:**—Plentiful (except during fishing season), at 80 c. to 1 dol. per day.

CHARLOTTE TOWN.

Charlotte Town, in lat. 46°16' N., long. 63°8' W., is situated on the northern bank of the Hillsborough River.

Population.—12,080.

Accommodation.—Vessels of the largest draught can enter the harbour and ascend the Hillsborough to and above Charlotte Town, and

Canada—Charlotte Town (*continued*).

can anchor close to and off the wharves, in 7 to 9 fathoms of water, good anchorage. Vessels of 10 to 10½ ft. draught can go up the Hillsborough about 15 to 17 miles, but in all cases should take a pilot. The harbour is well buoyed and easy of access. Rise and fall, springs 9 to 10 ft.; neaps, 5 to 6 ft. There is good water at the ends of the wharves for vessels of 1,000 tons, but when alongside the wharves they ground at low water on a bottom of soft mud. There is 23 ft. of water at low tide at the end of the railway wharf for 240 ft. Dredging operations are now being carried on, and when completed vessels of 2,500 tons will be able to go alongside Dominion Wharf. Ice forms in the harbour about December 5 to 13, but at times it remains open until January 1, but this cannot be depended upon; it is generally opened about April 20 to 25.

Pilotage.—Not compulsory. 1 dol. per ft. in or out.

Port Charges.—Harbour-master's Fees:—Vessels up to 50 tons, 50 c.; 51 to 150 tons, 1 dol.; 151 to 200 tons, 1 dol. 50 c.; 201 to 300 tons, 2 dols.; 301 to 400 tons, 2 dols. 50 c.; 401 to 500 tons, 3 dols.; 501 to 700 tons, 4 dols.; over 700 tons, 5 dols. (Payable twice a year at the two first ports of entry.)

Port-warden's Fees:—When loading grain, superintending loading, and certificate, under 100 tons, 5 dols.; under 150 tons, 6 dols.; under 200 tons, 7 dols.; under 300 tons, 8 dols.; under 400 tons, 9 dols.; over 400 tons, 10 dols. Certificate of seaworthiness, when loaded, 8 dols. Vessels putting in in distress from any other port not in Prince Edward Island are charged for every 1,000 bushels of wheat, or peas, 10 c.; barley, 8 c.; oats, 13 c.; maize, 5 c.; 1,000 barrels of flour, 70 c.; petroleum, per barrel, 5½ c.; ores and minerals per ton, 2 c.; lumber and other timber, 2 c. per ton weight.

Sick Mariners' Fund:—2 c. per reg. ton (payable three times a year).

Labour:—1 dol. per day; steamers 15 to 20 c. per hour. **Ballast:**—Stone 1 dol. per ton, including cartage; sand, about 40 c. per ton, including cartage and wharfage. **Wharfage:**—Free to shipping when loading or receiving cargo.

CHATHAM.

Chatham, in lat. 47°0' N., long. 65°30' W., is situated on the S. side of the Miramichi River, about 40 miles from its mouth, and 30 miles from Horse-shoe Bar.

Population.—5,000.

Exports.—Sawn lumber, pulp, pulp-wood, spool wood, tanning extract, canned lobster, clams, salmon, etc.

Accommodation.—There is a good harbour here, and excellent anchorage, perfectly sheltered from every wind. There is a depth of from 20 to 30 ft. of water alongside the wharves, and 22½ ft. on Horseshoe Bar at spring tides. Vessels drawing 19 ft. can go to sea at any high tide.

Pilotage.—Compulsory. Inwards, 2 dols. 25 c. per ft.; outwards, 2 dols. per ft. Steamers, 2 c. per ton additional. Moving vessels, 4 miles or under, 4 dols.; over 4 miles, 6 dols.

Port Charges.—Sick Mariners' Fund:—2 c. per reg. ton. **Wharfage Dues:**—Sailing vessels, under 50 tons burden, 30 c. per day; 50 tons and under 100, 50 c. per day; 100 tons and under 200, 80 c. per day;

Canada—Chatham (continued).

200 tons and under 300, 1 dol. 20 c. per day ; 300 tons and under 400, 1 dol. 50 c. per day ; 400 tons and under 500, 2 dols. per day ; 500 tons and under 600, 2 dols. 50 c. per day ; 600 tons and upwards, 3 dols. per day. Steamers, $\frac{1}{2}$ c. per ton per day. Vessels in the second tier pay half the above rates per day. Vessels having their line or lines fast to any wharf, but not lying near thereto, pay one-third of the above rates. Vessels lying outside the second tier pay one-third of the above rates. **Ballast Dues** :—For discharging at the wharves—Vessels under 100 tons burden, 3 dols. ; 100 to 199, 6 dols. ; 200 to 299, 8 dols. ; 300 to 399, 9 dols. ; 400 to 499, 10 dols. ; 500 to 599, 11 dols. ; 600 to 699, 12 dols. ; 700 to 799, 13 dols. ; 800 to 899, 14 dols. ; 900 to 999, 15 dols. ; 1,000 and upwards, 16 dols. For every 4 dols. paid as ballast dues, a day can be counted wharfage free, after which vessels at the wharf pay wharfage as follows—Vessels under 100 tons, 1 dol. per day ; from 100 to 499, 2 dols. per day ; 500 tons and over, 3 dols. per day.

Pro Forma Charges on a vessel of 2,475 tons :—

	Dols. c.
Hospital dues	49 50
Harbour-master	5 00
Pilotage in	77 63
Transporting	4 00
Pilotage out	92 50
Shipping master	2 00
Telegrams and postage	4 98
Wharfage, 15 days at 13 dols. per day	199 12
Use of staging	25 00
Discharging ballast, watchman	28 00
Butcher's account	97 04
Mooring	10 00
Scowling	5 00
Loading 1,543 stds. ; 1,343 stds. deals at 1 dol. 50 c., 200 stds. bds. at 1 dol. 75 c.	2,364 50
Extra for bunker hold, after poop and under bridge deck	100 00
Custom House entries	51 10
Oil	10 11
Towage, attendance to sea	70 00
Use of slings, 5 dols. ; winchmen (1) 25 days at 3 dols.	80 00
	<hr/>
	3,275 45 = £673 19s. 3d.

CHEMAINUS.

Chemainus is in lat. 48°58' N., long. 123°48' W.

Population.—200.

Export.—Lumber.

Accommodation.—There is sufficient water at all tides for the largest vessels. The tide rises and falls about 12 ft. The harbour is extremely well sheltered, and the anchorage is good, the depth varying from 5 to 25 fathoms. There is a private wharf 1,000 ft. long, with 24 to 32 ft. alongside at extreme low tides.

Pilotage.—See **Nanaimo**.

Port Charges.—**Sick Mariners' Fees** :—2 c. per net reg. ton (payable three times a year). **Towage** :—See **Nanaimo**. **Labour** :—Loading lumber, 1 dol. 10 c. to 1 dol. 35 c. per thousand, according to specification and style of vessel. **Harbour Dues** :—50 c. to 5 dols., according to the tonnage of the vessel. For details, see **Nanaimo**.

Canada—Chemainus (*continued*).

Pro Forma Charges on a steamer of 3,000 tons reg., ballast in, drawing 12 ft., and cargo of lumber out, drawing 24 ft. loaded :—

	Dols.	c.
Harbour dues	5	00
Brokerage	25	00
Pilotage in and out, 1 c. per ton and 1 dol. per ft. draught	96	00
Sick Mariners' dues, 2 c. per reg. ton	60	00
	186	00 = £38 5s. 6d.

CHICOUTIMI.

Chicoutimi, in lat. 48°25' N., long. 71°6' W., is situated on the Saguenay River.

Population.—3,826.

Exports.—Deals, timber, and pulp.

Accommodation.—Saguenay River is navigable for the largest ships up to Roche's Point, 57 miles from the St. Lawrence, and vessels drawing up to 18 ft., with the assistance of the flood tide, can ascend to Chicoutimi, 8 miles further. Extensive dredging operations are now being carried on in the channels, which will shortly enable vessels of 25 ft. draught to load at Chicoutimi.

Pilotage.—Vessels rarely attempt to sail or beat up the river, as a tug is always to be obtained by telegraphing from Father Point to Chicoutimi. Pilots belonging to the Quebec Pilots' Corporation can be obtained at Father Point. Rates—Inwards, 3 dols. 87 c. per ft.; outwards, 3 dols. 40 c.

Port Charges.—**Stevedoring** :—30 c. per ton. **Harbour Dues** :—5 dols. per voyage. **Custom Dues** :—4 dols. 60 c. **Hospital Dues** :—2 c. per reg. ton. **Fresh Water** :—25 c. per 100 gallons. Provisions cheap and plentiful.

COCAGNE.

Cocagne is in lat. 46°18' N., long. 64°37' W.

Export.—Lumber.

Accommodation.—The harbour of Cocagne is about 5 miles north of Shediac. As soon as a vessel arrives off the bar a pilot comes on board, who is absolutely necessary. There is 10 ft. on the bar at low water, and 13 ft. at spring tides. Springs rise 3 ft.; neaps 2 ft. The anchorage inside is in 4 to 5 fathoms, blue clay bottom, forming a good holding ground, and well sheltered, about 2 miles from the town. Cargo is brought alongside in rafts. Vessels can load outside the bar to almost any draught.

Pilotage.—In or out, 1 dol. 20 c. per ft. each way. **Harbour-master's Fee** :—3 dols. to 5 dols.

CRAPAUD.

Crapaud is in lat. 46°16' N., long. 63°28' W.

Accommodation.—Crapaud Road is, when inside, a good safe anchorage, off the mouth of the Brockelsby River, and is sheltered by the Tyron Shoals and Cameron's Reef. On the bar, or entrance to Crapaud basin, there is 12 ft. of water at low tide, and 15 ft. inside. Rise and fall,

Canada—Crapaud (*continued*).

8 ft. at springs, and 6 ft. at neaps. At the wharves in the harbour there is 7 ft. at low water, and in the channel, from the basin to the wharf, 8 ft., on a bottom of mud. Anchorage outside the bar is not any safer than in any part of the Strait. The harbour closes about December 15, and opens again about April 15. Vessels should not charter for this port to arrive late in the year, being then liable to be frozen in.

Pilotage.—Compulsory.

		1st Division. Dols. c.	2nd Division. Dols. c.	3rd Division. Dols. c.
Vessels of 80 tons and under 125 tons		1 25	2 00	3 25
" 125 " " 250 "		1 75	2 25	3 50
" 250 " " 350 "		2 00	2 50	3 75
" 350 " " 450 "		2 25	3 25	4 25

Vessels from 450 tons upwards, $\frac{1}{2}$ c. for each additional ton each way.

Where vessels have to be moved about the wharves, and pilots retained by captains of vessels for such services, the pilot will not be allowed to charge more than 1 dol. 50 c. for each and every tide; to be left to the captain's option to employ pilot for such services.

Port Charges.—Harbour-master's and Port-warden's Fees :—See **Charlotte Town.** **Wharfage :—** $\frac{1}{3}$ c. per ton per day. **Sand Ballast :—**25 c. per ton. **Labour :—**About 1 dol. per day. **Water :—**Plentiful.

DALHOUSIE.

Dalhousie is in lat. 48°3' N., long. 66°25' W.

Imports.—Salt, firebrick, and coal.

Exports.—Timber, deals, and pulp-wood.

Accommodation.—The harbour is at the head of Chaleur Bay, well sheltered and of easy access; depth of water, 6 to 7 fathoms. Good holding ground. Tides, springs 9 ft.; neaps 6 ft. There is 1,200 ft. of wharfage, 600 ft. with a depth of 24 ft. at low water, with railway connection; 300 ft. with 15 ft. at low water, with railway connection; and 300 ft. with 12 ft. at low water.

Pilotage.—Compulsory. Steamers—1 dol. 50 c. per ft. draught, and 2 c. per ton. Sailing Vessels—1 dol. 50 c. per ft.

Port Charges.—Mooring :—5 dols. per shift. **Wharfage :—**Maximum for steamers, 3 dols. per day; sailing vessels, 1 dol. 50 c. **Entrance and Clearance Fees :—**10 dols. **Towage :—**5 c. per ton in and out. **Boat Hire :—**25 c. per hour. **Ballast :—**Stone, 50 c. per ton. **Labour :—**2 dols. per day. **Brokerage :—**2 $\frac{1}{2}$ per cent. **Stevedoring :—**Deals, 80 c. to 1 dol. 25 c. per standard.

Pro Forma Charges on a steamer of 1,752 tons reg., ballast in and a cargo of pulpwood out, drawing 20 $\frac{1}{2}$ ft. loaded :—

	Dols. c.
Harbour dues at 1 dol. 50 c. per day (side wharfage), 13 days	19 50
Brokerage; 2 $\frac{1}{2}$ per cent. on disbursements	24 03
Pilotage, in and out	88 24
Bill of health	1 00
Harbour-master	5 00
Stevedoring, about 40 c. per cord on 2,032 cords	812 80
Sick Mariners' fee, 2 c. per ton	35 04

985 61 = £202 16s. 3d

Canada.**DIGBY.**

Digby is in lat. $44^{\circ}37'$ N., long. $65^{\circ}48'$ W.

Population.—1,250.

Imports.—Coal and general merchandise.

Exports.—Lumber and fish.

Accommodation.—The harbour is landlocked. There is a depth of 45 to 50 ft. at high water, and of 20 to 25 ft. at low water in the channel. Tides rise and fall 30 ft. There is a Government wharf here. Railway communication with Halifax and Yarmouth.

Pilotage.—Not compulsory. Rates according to agreement.

Port Charges.—**Wharfage** :—For a vessel of 500 tons, 1 dol. per day. **Entrance Fees** :—50 c. **Clearance Fees** :—50 c. **Towage** :—From 15 to 25 dols. each way. **Labour** :—About 1 dol. 50 c. per day.

Pro Forma Charges on a steamer of 500 tons reg., ballast in, and with a cargo of lumber out :—

	Dols. c.
Harbour dues	5 00
Pilotage in and out	20 00
Towage	40 00
Sick Mariners' fund	10 00
Wharfage, 10 days	10 00
Entrance fees	0 50
Clearance	0 50

86 00 = £17 13s. 11d.

DIGDEGUASH.

Digdeguash, in lat. $45^{\circ}10'$ N., long. $66^{\circ}59'$ W., is situated on Passamaquoddy Bay, about 8 miles N.E. of St. Andrews.

This port is an outpost of St. Andrews, and all vessels loading here enter and clear there. It is only frequented by large sloops and motor boats, no large vessels now loading here.

ESCOUMAIN.

(See **Sault au Mouton and Escoumain**, p. 903.)

ESQUIMALT.

Esquimalt is in lat. $48^{\circ}27'$ N., long. $123^{\circ}30'$ W. Shortest sea route from Liverpool, 14,410 miles.

Accommodation.—This is a good harbour, of easy access, situated on the S.E. portion of Vancouver Island. It is approached through the Strait of Juan de Fuca, which has an average breadth of 10 miles, free from danger. The usual anchorage is on the E. side of the harbour, in 6 fathoms, on good holding ground. The wharf at the marine railway is 400 ft. long with 24 ft. alongside. There are no cranes. Vessels are sometimes discharged by lighters to enable them to go alongside the Naval Dock. This dock is only available for merchant vessels when they are discharging naval stores. There are sheer-legs, 100 ft. high, to lift 75 tons, on the wharf belonging to the British Columbia Marine Railway Co. At the naval yard there is a sheer-legs to lift 20 tons. There is a dry dock here, 450 ft. long on the blocks, 65 ft. wide at the entrance at high water ordinary springs level, and $26\frac{1}{2}$ ft. on the sill at ordinary springs. There is also a marine railway, capable of hauling vessels of 2,500 tons, and with a length of 307 ft. Vessels to 2,000 tons are built and engined.

Canada—Esquimalt (continued).

SCALE OF CHARGES FOR THE USE OF THE DOCK.

Gross Tonnage of Vessel.	For the first day of docking.	For each following day, including the undocking day.
For all vessels up to 1,000 tons	300 dols.	5 c. per ton.
From 1,001 to 2,000 tons	350 "	4½ "
For all vessels above 2,000 tons	400 "	4 "
	up to 2,000 tons, and 2 c. per ton on all tonnage above 2,000.	

All fractional parts of 50 tons to be counted and paid for as 50 tons. Car-goes to be charged for at the same rates as tonnage, and no charge for ballast. Each day to be counted from 7 a.m. to 7 a.m., and each fractional part of a day will be charged as one day.

No reduction will be allowed for Sundays and holidays.

N.B.—No vessel will be admitted into the dock until she has been duly entered in accordance with Rule and Regulation No. 1, on the entry books in the dock-master's office, nor until after the sum of 200 dols. shall have been paid to the dock-master as an entrance fee.

For pilotage and other charges, see **Victoria**.

GASPÉ.

Gaspé, in lat. 48°50' N., long. 64°32' W., is situated at the head of Gaspé Bay, 16 miles from the lighthouse on Cape Gaspé.

Exports.—Fish and lumber.

Accommodation.—This is one of the safest harbours in the Dominion of Canada. The anchorage is in from 6 to 7 fathoms of water, on a clay bottom. Vessels drawing 30 ft. of water can safely enter. The ballast ground is in the N.W. Bay about 300 yards above Gaspé Bluff, in 7 fathoms. A yellow buoy is placed at the spot. The navigation is open from the first week in May to the middle of December. There is steam communication fortnightly with Quebec, Montreal, and the maritime provinces, during the season of navigation. Mails arrive daily from all parts. Telegraphic communication to all parts.

Coal for steamers can always be obtained here. There is a regular coal depot with 20 feet of water at the head of the wharf, and vessels drawing up to 30 ft. can be supplied by staging off about 15 ft. Prices of soft coal, 5 dols. to 5 dols. 50 c. per ton; anthracite, 8 dols. to 8 dols. 50 c. per ton. No charge for wharfage or for the use of stages to vessels coaling.

Pilotage.—On entering the bay, competent fishermen as pilots can be procured about 1 mile above the lighthouse on Cape Gaspé, N. side of the bay; charge 1 dol. per ft. draught; or according to agreement. Should a pilot not be taken, there is no difficulty whatever in making the port, as there is a lighthouse placed on the Point of Sandy Beach.

Port Charges.—

HARBOUR-MASTER'S FEES.

		Dols.	c.
From every ship of	50 tons register or under	0	50
"	over 50 tons and under 100 tons register	1	00
"	" 100 " " 200 " "	1	50
"	" 200 " " 300 " "	2	00
"	" 300 " " 400 " "	2	50
"	" 400 " " 500 " "	3	00
"	" 500 " " 700 " "	4	00
"	from 700 tons register upwards	5	00

Canada—Gaspé (*continued*).**WHARFAGE.**

		Dols. c.	
Vessels of	50 tons and under, per day	.	0 50
"	51 to 100 tons per day	.	0 75
"	101 " 200 "	.	1 00
"	201 " 300 "	.	1 50
"	301 " 500 "	.	2 00
"	501 tons and upwards, per day	.	3 00

Or according to agreement.

Labour :—From 1 dol. to 2 dols. per day, according to agreement. **Provisions** :—All kinds at moderate rates. **Water** :—Free when taken by the vessel's boats ; when brought alongside, 50 c. per 100 gallons.

GEORGETOWN.

Georgetown, in lat. 46°13' N., long. 62°29' W., is situated on the S. side of the peninsula between the Cardigan River and the estuary formed by the Montague and Brudenell Rivers, at the entrance to Cardigan Bay, on the S.E. side of the island.

Population.—1,120.

Accommodation.—It is one of the finest harbours in the island, and is most easy of access. It is chosen as the winter port for the mail steamers which make almost daily trips to and from Picton, Nova Scotia, during part of the winter months ; it is accessible to sailing vessels until about January 5, or until the ice in the Gulf of St. Lawrence prevents navigation for that class. There is good anchorage off the town in from 4 to 6 fathoms, bottom of soft mud. The anchorage in Cardigan Bay is also good. Rise and fall, 5 ft. springs ; neaps 3½ ft. There is 17½ ft. at the end of the railway wharf, and 13½ ft. at Queen's wharf at low water ; not so much at the sides of the wharves.

Shipping can ascend the Montague River 5 miles above Georgetown to the bridge, but a short distance below the wharves there is a shoal with only 11½ ft. at high water, good tides. The Cardigan River is navigable for 7 miles above Burnt Point to Cardigan bridge, and shipping can come out from the wharves there with 12½ ft. at high water, good tides, and 14 ft. from the Government wharf. Queen's wharf is 630 ft. long, and the railway wharf is 750 ft. long.

Pilotage.—Not compulsory. 65 c. per ft., in or out. In all cases for the Montague and Cardigan Rivers, vessels should take a pilot.

Port Charges.—Harbour-master's and Port-warden's Fees :—See **Charlotte Town**. Wharfage at the railway wharf free while landing or receiving cargo from or for the cars, otherwise the wharfage is chargeable as per tariff ; at other wharves ½ c. per ton per day. **Water** :—25 c. per cask. **Sand Ballast** :—25 c. per ton ; wharfage on it, 6 c. per ton. Landing ballast, 14 to 16 c. per ton, according to the kind ; removing ballast from the wharf, 18 c. per ton. Provisions of all kinds are easily obtained.

GRAND PABOS.

Grand Pabos is in lat. 48°22' N., long. 64°43' W.

Population.—About 2,000.

Imports.—Salt, molasses, sugar, and all kinds of goods for fishing.

Export.—Lumber.

Canada—Grand Pabos (*continued*).

Accommodation.—The anchorage is in 14 to 15 fathoms, on good holding ground. The cargo is brought alongside in lighters. Wind from S.W. to W. raises a heavy sea.

Pilotage.—4 dols.

Port Charges.—**Hospital Fund** :—2 c. per reg. ton. **Shipbroker** :—Entrance, $2\frac{1}{2}$ dols. ; clearance, $2\frac{1}{2}$ dols. **Stevedore** :—Loading, about 1 dol. per standard. **Custom House Charges** :—For a vessel of 880 reg. tons, 15 dols.

GUYSBOROUGH.

Guysborough, in lat. $45^{\circ}23'$ N., long. $61^{\circ}29'$ W., is situated at the head of Chedabucto Bay.

Export.—Fish.

Accommodation.—The water area of this harbour is 500 acres. At ordinary springs there is a depth at high water on the bar of 22 ft., and at ordinary neaps 20 ft. The anchorage is good. There are several private wharves with a depth of 16 ft. at high water, and 11 ft. at low water, ordinary springs.

Pilotage.—Charge nominal.

Port Charges.—**Sick Mariners' Fund** :—2 c. per reg. ton. **Labour** :—1 dol. per day.

HALIFAX.

Halifax, the capital of Nova Scotia, is in lat. $44^{\circ}39'$ N., long. $63^{\circ}37'$ W. Distance from Liverpool, 2,485 miles.

Population.—40,850.

Imports.—Colonial produce, manufactured goods, West Indian produce, salt, etc.

Exports.—Dried, pickled, and canned fish, lumber, coal, cattle, flour, butter, oats, potatoes, gypsum, deals, oils, furs, apples, wood-pulp, cheese, hay, etc.

Accommodation.—The harbour is good, and can be entered by the largest vessels. It is open at all times. There are two wharves, both belonging to the Intercolonial Railway. The Halifax Terminus Wharf has 3,700 ft. of quayage, with a depth at low water of from 20 to 40 ft. There are two movable cranes, to lift from 15 tons each, and two staithes for the shipment of coal from 90 to 100 tons per hour each. The Richmond Wharf has 3,700 ft. of quayage, with a depth of from 20 to 50 ft. This wharf is also equipped with two staithes for the shipment of coal at from 90 to 100 tons per hour.

Halifax has a large fishing and general trade with Great Britain, West Indies, and United States. It is the ocean terminus of the Intercolonial Railway, and the winter port of the Dominion of Canada. All Canadian mails are landed here during five months of the year.

There is a dry dock, with the following dimensions :—Length, 588 ft. over all ; width of entrance, at the high ordinary spring level, 88 ft. ; depth on the sill at ordinary high springs, 30 ft. The Admiralty have the right of priority of the use of this dock. There are four patent slips with lifting powers of 3,000, 900, 200, and 150 tons respectively.

Canada—Halifax (continued).

No charge is made for wharfrage on goods going over the railway. Vessels do not pay wharfrage when loading or discharging at the private wharves, the fee coming from the cargo. There is very little current in the harbour, and good anchorage ground in from 12 to 15 fathoms. The rise and fall of the tide is 6 ft. There is a grain elevator with a capacity of 500,000 bushels. Railway connection with the western part of Nova Scotia by the Dominion, Atlantic, Halifax, and South-Western Railways.

Before entering at the Custom House, masters must deposit their articles with the shipping-master. Before clearing they must produce certificates that the harbour-master's fees and pilotage have been paid, and that the master has received his articles from the shipping-master.

Time Signals.—Chronometers can be checked. A black ball is hoisted half-way up a mast on the Halifax Citadel 15 minutes before the signal and close up 1 minute before. The ball is dropped at 1 p.m. Atlantic time, equal to 5 h. 0 m. 0 s. p.m. Greenwich mean time, and 0 h. 45 m. 40.7 s. local mean time.

Signals are also given at Halifax Approach by wireless telegraphy.

Pilotage.—

	In.		Out.	
	Dols.	c.	Dols.	c.
Vessels 120 to 200 tons	.	.	9	60
" 201 " 300 "	.	.	13	20
" 301 " 400 "	.	.	16	80
" 401 " 500 "	.	.	19	20
" 501 " 600 "	.	.	21	60

Over 600 tons, 60 c. inwards, and 30 c. outwards, additional for every 100 tons.

Moving vessels up to 2,000 tons, 5 dols.; over 2,000 tons, 10 dols.; moving vessels to quarantine in case of sickness, up to 1,000 tons, 10 dols.; over 1,000 tons, 20 dols.

Port Charges.—**Sick Mariners' Fund** :—2 c. per net reg. ton (payable three times a year). **Signal Tax** :—1 dol. **Harbour-master's Fee** :—50 c. to 5 dols., according to the tonnage of the vessel (payable twice yearly).

Towage :—From Chebucto Head, sailing vessels, 20 dols. to 40 dols., as agreed upon, or 10 dols. per hour; docking vessels, 4 dols. to 20 dols. Steamers in and about the harbour, 2½ c. per ton for one tow boat; for a second, half rates; from and to Beach light and anchorage, in stream, 2½ c. per ton, and 4 c. to dock; from and to Devil's Island, 4 c. and 5 c. respectively to the same. These rates do not apply to vessels in distress.

Port-warden's Fees :—For surveys, 2 dols. 50 c. **Labour** :—25 c. per hour by day; 30 c. per hour by night. **Stevedore** :—Discharging, 25 to 40 c. per ton d.w., as agreed upon. **Ballast** :—75 c. per ton. **Water** :—¼ to ½ c. per gallon. **Beef** :—10 c. per lb. **Commissions** :—On disbursements and up freights, 2½ per cent. **Dry Docking** :—20 c. per ton, first day; 12½ c. per ton each day after.

Pro Forma Charges inwards and outwards on a steamer of 2,000 net reg. tons :—

	Dols.	c.
Signal tax	.	1 00
Sick Mariners' dues, 2 c. per net register ton	.	40 00
Port warden	.	2 50
Harbour-master	.	5 00
Shipping-master (endorsing articles)	.	6 70
Pilotage in and out	.	47 40
Noting protest	.	1 50
Water, say 8,000 gallons at ¼ c. per gallon	.	20 00

Carried forward . . . 118 10

Canada—Halifax (*continued*).

	Dols.	c.
Brought forward	118	10
Checking cargo, say four checkers, 60 hrs. each—240 hrs. at 25 c.		
per hour	60	00
Stevedore's bill—discharging say 2,000 tons cargo at 37½ c.		
per ton	750	00
Stevedore's bill—loading say 700 stds. deals at 1 dol. 25 c. per std.	875	00
Stevedore's bill—loading say 4,000 bls. apples at 3½ c. per bl.	140	00
Customs brokerage	10	00
Agent's commission inward freight say 5,000 dols. at 2½ per cent.	125	00
Agent's commission, outward freight, say 7,600 dols. at 2½ per cent.	190	00
	2,268	10 = £466 13s. 9d.

Disbursements vary according to circumstances.

HANTSPORT.

Hantsport, in lat. 45°2' N., long. 64°12' W., is situated on the W. side of the Avon River, about 4 miles above Horton Bluff.

Population.—800.

Imports.—General merchandise.

Export.—Lumber.

Accommodation.—There is good anchorage about 600 yards off the wharves for vessels, and a depth of 15 to 25 ft. at low and high water at the wharves. Hantsport has an excellent gravel beach, and blocks have been put down at a wharf suitable for vessels of any size to come on for repairs; charges very moderate.

Pilotage.—Not compulsory.

Port Charges.—**Wharfage** :—50 c. to 1 dol. per day. **Entrance Fees** :—25 c. per reg. ton. **Clearance Fees** :—25 c. per reg. ton. **Towage** :—About 25 dols. for a vessel of 500 tons. **Ballast** :—50 c. per ton. **Labour** :—1 dol. 50 c. to 2 dols. per day.

HORTON.

Horton is in lat. 45°5' N., long. 64°15' W.

Accommodation.—Horton lighthouse is situated on a prominent bluff at the mouth of the Avon River, which flows into the Basin of Mines, one of the head waters of the bay of Fundy. Anywhere from half a mile to one mile from Horton Bluff with light bearing S. by W., there is not less than 30 ft. of water at low tide. Vessels of any size can lay with safety (channel about a quarter of a mile wide). There is a black can buoy moored on the port side of the channel, and a red can buoy on the starboard side to mark the channel anchorage. There is a gas can buoy placed in the channel 7 miles N. by E. from Horton Bluff light, outside of all the bars, marking the entrance to the channel. At high water every bar and flat is covered to a depth of not less than 5 fathoms, so that any vessel can come direct to Horton Bluff anchorage. Vessels lie afloat to receive cargo, which is brought down in lighters and placed alongside by the company's tugboat.

Port Charges.—**Sick Mariners' Fund** :—2 c. per reg. ton. **Harbour-master's Fee** :—From 1 to 5 dols.

JORDAN RIVER.

The mouth of this river is in about lat. 43°40' N., long. 65°12' W.

Canada.—Jordan River (*continued*).**Exports.**—Lumber and fish.

Accommodation.—This may be considered a safe place in the summer time for a vessel of 16 ft. draught. Vessels usually proceed to load deals here after having discharged at some other Nova Scotian port, where the Customs dues, etc., are paid, so that the expenses here are trifling. The most dangerous season is from the beginning of September to the middle of June. There is a breakwater here with a depth of water at its head of 15 ft. at low tide, bottom soft mud.

Pilotage.—There are no regular pilots; fishermen are sometimes employed, but with a good Admiralty Chart of the approaches their services are unnecessary.

Port Charges.—Vessels lying alongside the breakwater pay:—300 to 400 tons, 40 c. per day; 401 to 500 tons, 50 c.; 501 to 800 tons, 75 c.; **Sick Mariners' Fund**:—2 c. per ton. **Custom Dues and Brokerage**:—1 dol. 50 c. to 2 dols. **Bill of Health**:—1 dol. **Harbour-master's Fees**:—400 to 500 tons, 3 dols. **Labour**:—1 dol. 75 c. to 2 dols. for stevedores. **Water**:—Free. **Brokerage** commission on freight procured, $2\frac{1}{2}$ to 3 per cent.

LEPREAU.

Lepreau is in lat. $45^{\circ}10'$ N., long. $66^{\circ}29'$ W.

Exports.—Herrings and clams for canning purposes.

Accommodation.—There is a good harbour here, and good anchorage in from 3 to 7 fathoms of water. Saltosh Island is situated at the mouth of the harbour, and there is a reef running eastwards to the mainland. There is no channel on the eastern side of the island at low water. This port is only frequented by small boats, no large shipping trade being done here now.

LISCOMB AND ST. MARY.

Liscomb Harbour, in lat. $45^{\circ}2'$ N., long. $62^{\circ}0'$ W., is 12 miles S.W. of St. Mary River.

Population.—1,000.

Imports.—Manufactured goods.

Exports.—Lumber, fish, and farm produce.

Accommodation.—There is a depth of from 25 to 30 ft. of water at the anchorage, and all large vessels and steamers load here.

St. Mary is in lat. $45^{\circ}2'$ N., long. $61^{\circ}51'$ W., at the mouth of the St. Mary River, and Gegogin (now part of the port of St. Mary) is 3 miles S.W. There is 26 ft. at low water, and 32 ft. at high water at the anchorage at Gegogin, and all large vessels now load here. There is a depth of 14 ft. at the wharves, and 26 ft. at the loading berth.

Pilotage.—

					Inward. Dols.	Outward. Dols.
Vessels of	80 tons and under	150 tons	.	.	4	6
"	151 "	up to 200 "	.	.	5	7
"	201 "	" 250 "	.	.	6	8
"	251 "	" 300 "	.	.	7	9
"	301 "	" 350 "	.	.	8	10
"	351 "	" 400 "	.	.	9	11
"	401 "	" 500 "	.	.	11	13
"	501 "	" 600 "	.	.	14	16

And 1 dol. extra for every additional 100 tons. Pilotage on steamers and sailing vessels towed one-third less.

Canada—*Liscomb and St. Mary* (continued).

Port Charges.—Harbour-master's Fees :—For vessels over 100 tons, and not exceeding 200 tons, 1 dol. 50 c. ; over 200 tons, 2 dols. ; over 300 tons, 2 dols. 50 c. ; over 400 tons, 3 dols. ; over 500 tons, 4 dols. ; over 700 tons, 5 dols. Same rate for steamers. **Customs Clearance :—**50 c. **Wharfage :—**1 dol. per day. **Stevedore :—**2 dols. 25 c. per day and board. **Sick Mariners' Fund :—**2 c. per ton. **Labour :—**1 dol. 25 c. per day. **Winches :—**For loading, 12s. each, for use. **Water :—**Fresh water free. **Provisions :—**Cheap.

A vessel of 357 tons reg. loaded a cargo of 70 standard deals, and 208 loads of timber ; draught of water, 14 ft. Her total expenses amounted to £64 7s.

LITTLE GLACE BAY.

Little Glace Bay is in lat. 46°13' N., long. 59°59' W.

Population.—About 7,000.

Imports.—General merchandise.

Export.—Coal.

Accommodation.—There is a water area of 20 acres in the artificial harbour. The harbour is $\frac{1}{2}$ mile long and 500 ft. wide at its greatest width. The depth available at high water for vessels entering at ordinary springs is 20 ft., and at ordinary neaps 19 ft. The entrance is 120 ft. wide. There is 2,000 ft. of quayage with 25 ft. alongside at high ordinary springs. The rise and fall of ordinary springs is 5 ft. There are five staithes for the shipment of coal from 200 to 250 tons an hour each. Vessels make fast to piers at both sides of the harbour. The harbour has an easterly exposure, but vessels are perfectly safe inside in all weathers.

Pilotage.—Compulsory. For vessels of 120 to 150 tons, in and out, 12 dols., and 2 dols. extra for every additional 50 tons. If a pilot is not employed, half the above rates are charged.

Port Charges.—Entrance and Clearance Fees :—1 dol. **Towage :—**5 c. per net reg. ton. **Boat Hire :—**For steamers, 4 dols. **Labour :—**2 dols. per day of 10 hours. **Brokerage :—**Chartering commission, $2\frac{1}{2}$ to 5 per cent. **Harbour-master's Fees :—**From 1 to 5 dols., according to the tonnage of the vessel.

Pro Forma Charges on a steamer of 700 tons reg., ballast in and cargo of coal out, drawing 17 ft. loaded :—

	Dols.	c.
Harbour-master's fee	5	00
Customs, entrance and clearance	1	00
Pilotage, in and out	36	00
Boat hire	4	00
	<hr/>	
	46	00 = £9 9s. 3d.

LIVERPOOL.

Liverpool is in lat. 44°2' N., long. 64°45' W.

Population.—2,500.

Exports.—Lumber, fish, pulp, etc.

Accommodation.—There is good anchorage outside the bar in from 4 to 15 fathoms. The depth on the bar at ordinary springs is, at high

Canada—Liverpool (*continued*).

water 15 ft., at low water 9 ft. The width of the river is 300 ft., and there is from 50 to 100 ft. of private wharfage, with a depth alongside at ordinary springs of 17 ft. at high, and 11 ft. at low tide.

There are scows, with steam hoists, to carry 200 tons each, for lightering cargoes, capable of handling 600 tons per day. Steamers load pulp direct for England. This is the only winter harbour for miles along the coast.

There are two pulp, one paper, and five timber and board mills situated on the river near the town.

The Halifax and S.S. Railway runs through the town. Shipbuilding is carried on, and there is a foundry and machine shop where small repairs can be executed. There is a patent slip with a lifting power of 400 tons.

Pilotage.—Free.

Port Charges.—Towage :—Over the bar, 3 dols. to 5 dols. for small vessels. **Tonnage Dues** :—1 dol. **Port Dues** :—1 dol. **Commission** :—On collecting freight, 1 to 2 per cent. ; on disbursements, 1 to 2 per cent. **Ballast** :—30 c. per ton. **Lighterage** :—Pulp, 40 c. per ton ; lumber, 75 c. per thousand. **Stowage** :—Pulp, 25 c. per ton ; lumber, 40 c. per thousand.

LOUISBURG.

Louisburg, in lat. 45°54' N., long. 59°58' W., is on Cape Breton Island.

Accommodation.—This harbour is well sheltered, and has 37 ft. of water at the anchorages.

The Dominion Coal Co. has a loading pier 1,200 ft. in length, from which coal can be shipped from chutes at the rate of 20,000 tons per day of 24 hours, and from a belt conveyer at the rate of 700 tons per hour. There is a low level pier 1,200 ft. in length for receiving and shipping cargo. Both piers are connected by rail with the Sydney and Louisburg Railway, which joins with the Canadian Government system at Sydney. The depth alongside the piers at ordinary springs is 40 ft. at high and 36 ft. at low tide. There are a number of smaller wharves.

LUNENBURG.

Lunenburg is in lat. 44°22' N., long. 64°31' W.

Population.—Including suburbs, 6,000.

Exports.—Fish and lumber.

Accommodation.—Lunenburg Bay is 5 miles long and $2\frac{3}{4}$ miles broad at the entrance. The harbour is safe from all winds, and has lately been dredged from Battery Point to the head of all the wharves. There is a depth of water of 22 ft. at low tide, and of 28 to 30 ft. at high tide. The railway wharf, which is 700 ft. in length, can easily accommodate four large vessels of 1,000 tons each, to load full cargoes. Both divisions of this wharf have been dredged to a depth of 22 to 28 ft. at low and high water, and the other wharves, twelve in number, are being dredged so as to afford similar accommodation. There is a patent slip with a lifting power of 900 tons, also a smaller slip. There are two tugboats.

Pilotage.—Charges nominal.

Port Charges.—Sick Mariners' Fund :—2 c. per reg. ton. **Harbour-master's Fee** :—From 1 dol. to 5 dols., according to the size of the vessel. **Stevedoring** :—40 c. per 1,000 ft. (superficial) lumber and deals. **Towage** :—Charges moderate. **Labour** :—1 dol. 75 c. to 2 dols. per day.

Canada.

MABOU.

Mabou is in lat. $46^{\circ}5'$ N., long. $61^{\circ}22'$ W.

Population.—700.

Imports.—All kinds of produce and merchandise.

Exports.—Coal and plaster.

Accommodation.—The accommodation is good, and there is a depth at high water of 14 ft., and at low water of 9 ft. There is one wharf on the coal pier, and one Government wharf. The port is protected by a break-water 500 ft. long. The bar at the entrance is also about 500 ft. long.

Pilotage.—Compulsory. 3 dols. per steamer; 2 dols. 50 c. sailing vessels.

Port Charges.—**Entrance Fees** :—From 50 c. to 4 dols. **Clearance Fees** :—From 50 c. to 4 dols.

MATANE.

Matane, in lat. $48^{\circ}49'$ N., long. $67^{\circ}35'$ W., is on the south shore of the River St. Lawrence.

Population.—1,200.

Exports.—Deals and spool wood.

Accommodation.—The anchorage ground is about 1 mile off shore, in 7 to 9 fathoms of water, on a sandy bottom. The depth of water increases rapidly, and there is 20 fathoms about two cable lengths from the anchorage. From the middle of May to the middle of September it is considered safe. Easterly winds prevail in spring, and prevent loading. Provisions can be obtained here.

Captains must report to their Consul on arrival and departure.

Pilotage.—Pilots can be obtained at Bic, 60 miles S.W. of Matane.

Port Charges.—**Harbour Dues** :—Vessels over 700 tons, 5 dols. **Sick Mariners' Fund** :—2 c. per reg. ton. **Entering and Clearing Customs** :—10 dols. **Bill of Health** :—1 dol. **Stevedore** :—Loading, 90 c. per standard; average work on steamers, 100 standards per day.

MINUDIE.

Minudie is about 9 miles S. of Sackville.

Vessels drawing 12 ft. can lie in 3 to 4 fathoms, about 2 miles from the town, or if taking the ground, can lie close to.

Charges the same as at Sackville.

MIRAMICHI.

Miramichi is in lat. $46^{\circ}59'$ N., long. $65^{\circ}55'$ W.

Exports.—Sawn lumber, hemlock bark extract for tanning, wood-pulp, and fish.

Accommodation.—The river is navigable to Beaubère Island by any vessel that can cross the inner bar. The Horseshoe or inner bar can only be crossed at neap tides by vessels drawing 20 ft. and under; at spring tides, those of 22 ft. draught can safely cross, and sometimes even those of greater draught. Vessels generally load between Loggieville steam-

Canada—Miramichi (continued).

mill and Flett's steam-mill, a distance of nearly 12 miles. There are about 30 wharves with a total length of 4,500 ft., and a depth alongside of 17 ft. at low and 25 ft. at high tides. The bottom is muddy clay. There are no cranes.

Pilotage.—Strangers should not attempt to cross the bar without the assistance of a pilot. Pilots await the arrival of vessels at Point Escuminac. Inwards, 2 dols. 25 c. per foot; outwards, 2 dols. Steamers, 2 c. per ton extra.

For the removal of any ship or vessel, and seeing such ship or vessel properly secured and moored, the following are the rates, viz., 1 dol. 50 c. for vessels not exceeding 100 tons; 2 dols. for vessels over 100 tons and not exceeding 200 tons; 3 dols. for vessels over 200 tons and not exceeding 300 tons; and 4 dols. for all vessels over 300 tons. Where the distance of removal exceeds 4 miles, 50 per cent. additional shall be allowed on the above rates; and after November 1 in each year, any pilot taking out any ship or vessel shall be entitled to demand and receive the sum of 4 dols. in addition to the above rates, provided that such pilot shall have taken such ship or vessel clear to sea, leaving her without causing any unnecessary delay, and without the ship or vessel being obliged to land such pilot.

Port Charges.—Wharfage Dues :—

				Dols.	c.
For every vessel of	50 tons and under	100 tons, per day	.	0	50
"	100	200	"	0	80
"	200	300	"	1	20
"	300	400	"	1	50
"	400	500	"	2	00
"	500	600	"	2	50

And 25 c. for each additional 100 tons. Steamers, $\frac{1}{2}$ c. per reg. ton per day.

Vessels lying in the second tier pay half the above rates and vessels making fast to any wharf, but not lying near thereto, pay one-third the above rates.

Ballast Dues :—For discharging at the wharves :—

				Dols.
For every vessel under the burden of	100 tons	.	.	3
"	of 100 tons and under	200	"	6
"	"	200	"	8
"	"	300	"	9
"	"	400	"	10
"	"	500	"	11
"	"	600	"	12
"	"	700	"	13
"	"	800	"	14
"	"	900	"	15
"	"	1,000 tons and upwards	"	16

For every 4 dols. paid in ballast dues, a day to be counted wharfage free; after which, every day any vessel shall be at the said wharf she shall pay wharfage, viz., for vessels under 100 tons, 1 dol. per day; 100 tons and under 500 tons, 2 dols. per day; 500 tons and over, 3 dols. No vessel, however, will be accommodated at this wharf when other vessels are waiting to discharge ballast.

Stevedore :—1 dol. 50 c. per standard, including cost of bringing cargo alongside; if loading in the stream, 10 c. additional per standard is charged, including scow hire. **Towage** :—As per scale. **Harbour-master's Fees** :—From 1 to 5 dols., according to the size of the vessel. Provisions can be obtained at moderate prices.

Canada—Miramichi (*continued*).**Pro Forma Charges** on a steamer of 1,450 tons reg. :—

	Dols	c.
Hospital dues	29	16
Pilotage, in and out	133	82
Harbour master	5	00
Water	18	75
Shipping master	1	00
Wharfage	75	00
Towage	14	58
Staging	10	00
Loading 955½ stds. cargo	1,433	25
Customs business	20	00
2½ per cent. commission on 1,740 dols. 50 c.	43	50
	1,784	06 = £367 1s. 10d.

The other loading places on the Miramichi River are :—

NEWCASTLE, in lat. 47°1' N., long. 65°39' W. There is 3 to 4 fathoms of water close to the wharves. Population about 5,000.

DOUGLASTOWN.—Population about 500.

NORDIN, NELSON, and LOGGIEVILLE.—Vessels load at the wharves except at Loggieville, where they load in the stream.

MONTREAL.

Montreal, in lat. 45°30' N., long. 73°34' W., is the chief city of the Dominion of Canada, the commercial metropolis and largest seat of manufactures, the centre of the great railway system of the country, and the principal port of entry. It is situated at the head of ocean navigation on the River St. Lawrence, 139 nautical miles above Quebec, 159 below Lake Ontario, 348 N. of New York, 1,097 eastward from Chicago by the St. Lawrence water route, 2,969 from Liverpool via Cape Race, and 2,780 via the Strait of Belle Isle. It is 857 miles S.W. from the northern entrance at Belle Isle to the Gulf of St. Lawrence, and 969 from Cape Race.

Population.—With adjoining municipalities, about 450,000.

Imports.—East and West Indian produce and European manufactured goods, coal, salt, iron, etc.

Exports.—Farm produce, corn, flour, meal, meats—fresh, salted, and canned—provisions, fruits, potash and pearl-ash, live stock, phosphates, copper and silver ores, and manufactures of iron, logs, deals, boards, staves, etc.

Accommodation.—The Ship Channel from Quebec has now a depth of 30 ft. at ordinary low water, except at certain points between 20 and 50 miles above Quebec, which have not full depth at dead low tide, and is 300 ft. wide at its narrowest point, but the greater part is now widened to the standard minimum of 450 ft.

The harbour is perfectly safe, and has a wharf frontage of five and four-fifth miles, of which five and one-fifth is deep water wharfage, and affords every facility for loading and discharging. Extensive enlargements are in progress which will greatly add to the extent of deep water wharfage, and provide wharves of high level especially suited for large vessels. The earliest arrivals from sea are about the end of April, and the latest departures about the end of November, the harbour being generally closed by ice for most of the intervening period.

On arrival at Father Point, Rimouski, or Bic, the sea pilot is met, who

Canada—Montreal (*continued*).

takes charge to Quebec, where another pilot comes on board to conduct the vessel to Montreal.

The inland navigation from the Great Lakes to Montreal is performed by vessels carrying up to 2,100 tons dead weight, and drawing up to 14 ft. water. There are portable steam winches for loading and discharging.

Extensive repairs are undertaken. There is a floating crane to lift 25 to 30 tons.

There are two dry docks. Government No. 1 is 300 ft. long over all, 45 ft. wide at the entrance, and 10 ft. on the sill. No. 2 is 360 ft. long over all, 45 ft. wide at the entrance, and 10 ft. on the sill.

Time Signals.—A black ball is hoisted on the Tower of the Harbour Commissioners 5 minutes before the signal, and dropped at noon mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time.

Pilotage.—Compulsory between Quebec and Father Point, and between Quebec and Montreal.

From Father Point to Quebec :—

	Per foot.	
	Upwards.	Downwards.
	Dols. c.	Dols. c.
May 1 to November 10	3 87	3 40
November 10 to November 19	4 95	4 46
November 19 to March 1	6 02	5 54
March 1 to May 1	4 41	3 93

Quebec to Montreal :—

From the harbour of Quebec to Portneuf, and the opposite side of the River St. Lawrence, or below Portneuf and above the harbour of Quebec :—

Vessels in tow, or propelled by steam—

Upwards 50 c. per ft. draught.

Downwards 50 c. " "

Sea-going vessels propelled by steam—

Upwards 62½ c. " "

Downwards 62½ c. " "

Vessels under sail—

Upwards 1 dol. 05 c. " "

Downwards 70 c. " "

From the harbour of Quebec to Three Rivers and the opposite side of the River St. Lawrence, or any place above Portneuf and below Three Rivers :—

Vessels in tow or propelled by steam—

Upwards 1 dol. 50 c. per ft. draught.

Downwards 1 dol. 50 c. " "

Sea-going vessels propelled by steam—

Upwards 1 dol. 75 c. " "

Downwards 1 dol. 75 c. " "

Vessels under sail—

Upwards 2 dol. 60 c. " "

Downwards 1 dol. 90 c. " "

From the harbour of Quebec to Sorel and the opposite side of the River St. Lawrence, or any place above Three Rivers and below Sorel :—

Vessels in tow or propelled by steam—

Upwards 1 dol. 50 c. per ft. draught.

Downwards 1 dol. 50 c. " "

Sea-going vessels propelled by steam—

Upwards 1 dol. 87½ c. " "

Downwards 1 dol. 87½ c. " "

Vessels under sail—

Upwards 3 dol. 15 c. " "

Downwards 2 dol. 10 c. " "

Canada—Montreal (continued).

From the harbour of Quebec to the harbour of Montreal, or to any place above Sorel and below the harbour of Montreal :—

Vessels in tow or propelled by steam—			
Upwards	2 dol.	per ft. draught.	
Downwards	2 dol.	„	„
Sea-going vessels propelled by steam—			
Upwards	2 dol. 50 c.	„	„
Downwards	2 dol. 50 c.	„	„
Vessels under sail—			
Upwards	4 dol. 20 c.	„	„
Downwards	2 dol. 80 c.	„	„
From the harbour of Montreal to Sorel, or to any place above Sorel and below Hochelaga; and from Sorel or any place above Sorel and below Hochelaga, to the Harbour of Montreal—			
Upwards	1 dol.	„	„
Downwards	1 dol.	„	„

For the removal of any vessel from one wharf to another within the limits of the harbour; or from any of the wharves into the Lachine Canal; or out of the said canal to any of the wharves in the harbour; or from the foot of the current; or from Longueuil into the harbour; or from the harbour to the foot of the current or to Longueuil, for each service 5 dols. „ „

Port Charges.—Hospital Dues :—2 c. per reg. ton (payable three times a year). **Stevedore :—**Coal, full cargo, 28 to 30 c. per ton; general cargoes in or out, 35 c. per ton; scrap iron, 55 c. per ton; deals, average, 90 c. per m.; boards, 1 in. and 1½ in. 65 c. per m.; grain, full cargoes, 2 dols. 50 c. per thousand bushels; bunker coal, 65 c. per ton. **Labour :—**General cargoes, 30 c. per hour, day time; 35 c. per hour, night time; coal cargoes, 40 c. per hour, day time; 45 c. per hour, night time. **Provisions :—**All kinds of provisions and food can be obtained in abundance and at moderate prices. **Towage :—**Rates according to agreement.

Pro Forma Charges on a steamer of 3,814 tons gross (2,480 tons net reg.), with a cargo of coal inwards, and grain outwards :—

	Dols.	c.
Customs account, including sea pilotage	176	96
Harbour tugs	27	00
Quebec boatman	2	00
Watchman	35	00
Stationery and petties	10	00
River pilotage, in, 57 dols.; out, 55 dols. 2 c.; moving, 5 dols.	117	02
Shipping-master's fees	1	60
Port-warden's fees	5	00
Stevedoring inwards, about 6,000 tons at 25 c.	1,500	00
Stevedoring outwards, about 217,531 bushels	710	55
Ship lining	774	59
Elevating grain	490	84
Shipping Federation of Canada	5	11
Running lines	3	00
Agency fee	50	00
Bill of health	2	30

3,910 97 = £804 14s. 6d.

MOOSE RIVER.

Moose River flows into Mines Basin, between Partridge Island, near Parrsborough, and Five Islands.

Accommodation.—Vessels drawing 16 ft. can safely enter the river. They lie in the mud up to the bilge at low water, where they are safe and well sheltered.

Canada—Moose River *(continued)*.

There are a few deals cut here, but they are shipped in lighters to Parrsborough, 8 miles distant; spruce piling is also shipped from here. Vessels enter at Parrsborough.

Port Charges.—Towage :—In and out for a vessel of 500 tons reg. 50 dols. **Sick Mariners' Fund** :—2 c. per reg. ton.

MURRAY HARBOUR.

Murray Harbour, in lat. 46°1' N., long. 62°30' W., is a few miles W.N.W. of Cape Bear.

Population.—200.

Accommodation.—The bar is about $\frac{3}{4}$ of a mile outside of the Beaches, and is about 80 yards wide, with 10 ft. of water at low tide. A buoy is placed outside the bar in the fairway leading in; when there, the lighthouses in range or the two lights in one will lead into the beach, inside of which good anchorage can be had in 3 fathoms. Rise and fall, 6 ft. springs, and 3 ft. neaps. At the wharves in the river there is 8 ft. at low water.

Pilotage.—Not compulsory, about 2 dols. in or out.

Port Charges.—Harbour-master's and Port-warden's Fees :—See **Charlotte Town**. **Wharfage** :—At public wharf, $\frac{1}{3}$ c. per ton per day. Other wharves, according to agreement. **Labour** :—About 1 dol. per day.

MUSQUASH.

Musquash is in lat. 45°12' N., long. 66°18' W.

Accommodation.—Musquash harbour is about a mile wide at the entrance, and about 2 miles long. Vessels of 20 ft. draught can go in and out, and lie afloat in the loading berths at all times. A fair wind is necessary for vessels about the size of small schooners to go in or out. A pilot is indispensable.

The general agreement vessels make is for the charterer "to load the vessel, discharge the ballast, and pay all port dues, including pilotage in and out, for the sum of 1 dol. 50 c. per standard." Steam towage is extra, and can only be had by sending to St. John, about 15 miles distant. Nearly all supplies have also to be obtained there.

NANAIMO.

Nanaimo, in lat. 49°9' N., long. 124°0' W., is the seat of the coal industry of Vancouver Island.

Population.—6,139.

Imports.—Cotton and woollen goods, flour, butter, nitrate of soda, sulphur, sheep, groceries of all kinds, hardware, and general merchandise.

Exports.—Coal, herrings, etc.

Accommodation.—The port of Nanaimo embraces the twin harbours of Nanaimo and Departure Bay, which are connected by Exit Passage. The anchorage in both harbours is good, and the depth of water is sufficient for the largest vessels at any range of tide. Shipping is well sheltered by the outlying islands of Newcastle and Protection. Accommodation is afforded by the extensive wharves at Nanaimo for the delivery of Nanaimo coal on board all classes of vessels. New Wellington coal is shipped at Departure Bay direct from the Brechin Mine to the ship's hold or bunkers, by a system of conveyers. Extensive wharves are built a few yards from

Canada—Nanaimo (continued).

the pit, with a depth of water alongside of over 30 ft. at low water spring tides. Excellent facilities exist for bunkering steamers with dispatch; 1,000 tons per hour can be put on board. There are also two wharves (150 and 200 ft. long respectively) available for steamers drawing 20 ft. On the beach of Exit Passage vessels are grounded for cleaning or repairs.

All vessels bound to ports in British Columbia should call for pratique at Williams Head quarantine station, situated about 3 miles N.N.W. of Race Rocks.

Pilotage.—Rates for all vessels entering into or clearing from any port within the pilotage district of Nanaimo both outward and inward :—
Sailing vessels, 2 dols. per foot draught of water, and 1 c. per net reg. ton; vessels in tow of a steamer, 1 dol. per foot draught of water, and 1 c. per net reg. ton; steamers, 1 dol. per foot draught of water, and 1 c. per net reg. ton. Any portion of a foot not exceeding six inches shall be paid as half a foot; any fraction exceeding six inches shall be paid for as one foot. Vessels entering Nanaimo or Departure Bay by way of Dodd's Narrows will be charged pilotage if spoken by a duly licensed pilot and the pilot's services are declined. Vessels anchored at Williams Head quarantine station or in Royal Roads, bound to any port in the Nanaimo district, will be charged pilotage if spoken by a duly licensed pilot and the pilot's services are declined. The harbour limits for speaking vessels bound to Nanaimo or Departure Bay are at or outside a line drawn from Schooner Point, Gabriola Island, to Lighthouse Island, and from Lighthouse Island to Hornewell Bluff, Vancouver Island. The limits for speaking vessels bound to Ladysmith, Chemainus, or Crofton, are at or outside a line drawn from Coffin Island to Grave Point, Vancouver Island, bearing S. 61 E. and N. 61 W., magnetic. The limits for speaking vessels bound to Comox and Baynes Sound shall be at or outside a line drawn from Yellow Island to the shore of Vancouver Island, bearing N. and S. The limits for speaking vessels bound to Cowichan are at or outside a line drawn from Separation Point to Cowichan Head, bearing S.W. by S. $\frac{1}{4}$ S. and N.E. by N. $\frac{1}{4}$ N. Vessels accepting the services of a duly licensed pilot in the Straits of Juan de Fuca, Hare Straits, or Gulf of Georgia, and bound to any ports or harbours within the jurisdiction of the pilotage authority of Nanaimo, pay for such service both inwards and outwards the sum of 10 dols. per day or fraction of a day of 24 hours, in addition to the regular port pilotage. Any vessels arriving at any port within the pilotage district of Nanaimo, without having been spoken inwards by a pilot, shall not be exempt from paying outward pilotage, and masters of vessels requiring a pilot outwards must make application to the pilotage authority or their agents. Vessels requiring a pilot can be accommodated by calling off Victoria or Royal Roads and making the usual signal for a pilot. Should no pilot boat be on the station, steamships should blow four prolonged blasts of the whistle.

Port Charges.—Harbour Dues :—

				Dols. c.
For every ship	of 50 tons register or under			0 50
"	over 50 tons and not over 100 tons register			1 00
"	100 " " 200 "			1 50
"	200 " " 300 "			2 00
"	300 " " 400 "			2 50
"	400 " " 500 "			3 00
"	500 " " 600 "			4 00
"	600 tons register			5 00

Payable twice a year in Canada, at the first two ports of call.

Canada—Nanaimo (*continued*).**Sick Mariners' Dues :—**2 c. per reg. ton (payable three times a year).**Towage :—****TO OR FROM CAPE FLATTERY AND THE FOLLOWING PLACES.**

TONNAGE.	Royal Roads, Port Angeles.	Discovery, Townsend, Diamond Point.	Hadlock.	Gamble, Ludlow.	Everett, Madison, Ladysmith, Chemainus, Seattle, Cowichan, Blakely, Bellingham.	Tacoma, Utsalady, Nanaimo, Vancouver, Moodyville, Steveston.	Comox, B. C.
	\$	\$	\$	\$	\$	\$	\$
Vessels from—							
851 to 1,000 tons	125	175	200	225	250	275	300
1,001 „ 1,200 „	150	200	225	250	275	300	325
1,201 „ 1,500 „	175	225	250	275	300	325	350
1,501 „ 1,800 „	200	250	275	300	325	350	375
1,801 „ 2,000 „	225	275	300	325	350	375	400
2,001 „ 2,500 „	250	300	325	350	375	400	425
2,501 „ 2,750 „	275	325	350	375	400	425	450
2,751 „ 3,000 „	300	350	375	400	425	450	475
3,001 „ 3,500 „	325	375	400	425	450	475	500

TO OR FROM PORT TOWNSEND AND THE FOLLOWING PLACES.

TONNAGE.	Hadlock.	Diamond Point.	Gamble, Ludlow.	Seattle, Madison, Blakely, Bellingham, Everett.	Tacoma, Utsalady, Add \$25 to Cowichan, Ladysmith, Chemainus.	Nanaimo, Vancouver, Moodyville, Steveston, Add \$25 to Comox.
	\$	\$	\$	\$	\$	\$
Vessels from—						
851 to 1,000 tons. . .	30	50	60	100	110	175
1,001 „ 1,200 „ . . .	35	60	70	110	125	200
1,201 „ 1,500 „ . . .	40	70	75	125	150	225
1,501 „ 1,800 „ . . .	45	80	100	150	175	250
1,801 „ 2,000 „ . . .	50	90	125	175	200	275
2,001 „ 2,500 „ . . .	55	100	150	200	225	300
2,501 „ 2,750 „ . . .	60	115	175	225	250	325
2,751 „ 3,000 „ . . .	65	130	200	250	275	350
3,001 „ 3,500 „ . . .	70	150	235	275	300	375

TO OR FROM PORT ANGELES, ROYAL ROADS, AND THE FOLLOWING PLACES.

TONNAGE.	Townsend, Diamond Point.	Hadlock.	Gamble, Ludlow, Chemainus, Ladysmith, Cowichan.	Everett, Seattle, Blakely, Madison, Bellingham.	Tacoma, Utsalady, Nanaimo, Vancouver, Moodyville, Steveston.	Comox, B. C.
	\$	\$	\$	\$	\$	\$
Vessels from—						
851 to 1,000 tons . .	75	105	135	150	175	200
1,000 „ 1,200 „ . .	100	125	150	175	200	225
1,201 „ 1,500 „ . .	125	150	175	200	225	250
1,501 „ 1,800 „ . .	150	175	200	225	250	275
1,801 „ 2,000 „ . .	175	200	225	250	275	300
2,001 „ 2,500 „ . .	200	225	250	275	300	325
2,501 „ 2,750 „ . .	225	250	275	300	325	350
2,751 „ 3,000 „ . .	250	275	300	325	350	375
3,001 „ 3,500 „ . .	275	300	325	350	375	400

Canada—Nanaimo(continued).

Charge for hawser, 10 dols. each way.

Towage to or from Fraser River points above Steveston subject to special rates.

Rate from Vancouver to Sound ports above Port Townsend, same as sea rate to Sound Port.

Docking vessels, 25 dols. Vessels towing from sea to Tacoma or Seattle, and calling at Port Townsend or Port Angeles for orders, are given a direct rate. Captains should wire agent of tugs 48 hours' notice of when a tug is required.

Stevadore :—Charges according to agreement. **Coal Trimming** :—White labour, 50 c. ; Indian, 35 c. ; Chinese, 25 c. per hour. **Water** :—Good quality, abundant and cheap, supplied at wharves by the City Water Works Co., from 5 to 10 dols. All kinds of ships' supplies can be obtained here. **Custom House Fees** :—Nominal.

Pro Forma Charges on a steamer of 2,889 tons reg., ballast in and cargo of coal out, drawing 23 ft. 8 in. loaded :—

	Dols.	c.
Harbour dues	5	00
Pilotage, in and out of harbour	95	78
Pilotage up and down Gulf of Georgia and to and from Victoria	20	00
Bill of health	1	00
Sick Mariners' dues 2 c. per reg. ton	57	78
Trimming coal	49	15
	228	71 = £47 1s. 5d.

NEW GLASGOW.

New Glasgow is in lat. 45°35' N., long. 62°38' W.

Population.—5,000.

Imports.—Produce and lumber.

Accommodation.—There is a depth of 10 ft. at high water, and of 6 ft. at low water. There is a Government wharf 300 ft. long. Extensive repairs can be done to machinery.

Pilotage.—Not compulsory. About 4 dols. each way.

Port Charges.—**Wharfage** :—1 dol. per day. **Towage** :—Schooners, 4 dols. each way. **Labour** :—1 dol. 50 c. per day.

NEW RICHMOND.

New Richmond, in lat. 48°12' N., long. 65°54' W., is on Cascapediac Bay.

Population.—2,700.

Exports.—Timber and deals.

Accommodation.—The harbour is quite safe for vessels drawing 18 ft. Spring tides rise 10 ft ; neap tides, over 7 ft. The harbour is protected with a long bar on the east side, and also one on the west side. The entrance opens out in the bay ; the harbour is easy of access. On the end of the east bar is a red buoy ; the entrance of the harbour is to the west of the red buoy. At the red buoy at low tide there is 18 ft. of water. From the red buoy to the white buoy, which is in the harbour, the course is north-east. The ballast ground is on the west side of the harbour ; a black buoy is placed there. Close to the buoy is 18 ft. of water. Most vessels, when

Canada—New Richmond (*continued*).

loading, moor with one anchor. There is good anchorage all over the harbour on a bottom of soft mud.

Pilotage.—Not compulsory. Rates according to arrangement. Vessels heave-to outside the red buoy and wait for a pilot.

Port Charges.—Harbour-master's Fees:—Vessels of 300 tons, 3 dols.; 400 tons, 3 dols. 50 c.; 500 tons, 4 dols. **Sick Mariners' Fund:**—2 c. per reg. ton. **Custom House Charges:**—Entrance and clearance, 2 dols. **Labour:**—2 dols. 50 c. per day. **Stevedore:**—For a vessel of 500 tons, 50 dols.

NEW WESTMINSTER.

New Westminster, in lat. 49°13' N., long. 122°55' W., is situated on the north bank of the Fraser River, which flows into the Strait of Georgia, about 16 miles south of Burrard Inlet.

Population.—7,000.

Accommodation.—The town is 15 miles from the bar of the river, and can be reached by vessels of 20 ft. draught. As the entrance is narrow and the navigation intricate, a pilot is absolutely indispensable.

After passing the lighthouse at Race Rocks, in the Straits of Fuca, a vessel can take a pilot or tugboat and proceed here, or the captain may anchor at Royal Roads, and have the cargo lightered here by steamer. The Canadian Pacific Railway runs alongside the wharves, and return cargoes may be procured. There is plenty of water alongside the wharves, which are half a mile long.

Pilotage.—From the lighthouse at Fraser to New Westminster:—

	Dols.	c.	
For vessels under sail	4	00	per foot.
„ in tow of a steamer	2	00	„
„ under steam	1	50	„

From the lighthouse to Cape Flattery or Royal Roads, and vice versa, the pilotage is not compulsory, but if the services of a pilot are required he must be paid the following rates:—

For vessels under sail—

	Dols.	c.	
From Cape Flattery	6	00	per foot.
„ Callum Bay	5	00	„
„ Beachy Head	4	00	„
„ Race Rocks or Royal Roads	3	00	„

For vessels under steam or in tow of a steamer, the following rates are charged—

	Dols.	c.	
From Cape Flattery	3	00	per foot.
„ Callum Bay	2	50	„
„ Beachy Head	2	00	„
„ Race Rocks or Royal Roads, vessels under steam	1	00	„
„ Race Rocks or Royal Roads, vessels in tow of a steamer	1	50	„

Any fraction of a foot not exceeding six inches is reckoned as half a foot, and any fraction of a foot exceeding six inches as a foot.

Port Charges.—Lighterage:—From Royal Roads, 1 dol. 50 c. per ton. **Wharfage:**—Vessels do not pay wharfage, but goods landed on the wharf pay 60 c. per ton. For other charges, see **Vancouver**.

Canada.

NORTHPORT.

Northport is in lat. $45^{\circ}56'$ N., long. $63^{\circ}52'$ W.

Population.—350.

Import.—Produce.

Export.—Lumber.

Accommodation.—This is a loading place. Vessels anchor about 1 mile off the land, and can load down to any depth with safety. There is a depth of 5 fathoms at high water; the tide falls 7 ft.

There is a Custom House here.

Pilotage.—Compulsory. 1 dol. per ft. draught, in and out.

Port Charges.—**Stevedoring** :—1 dol. per standard. **Clearance Fees** :—2 dols.

◆ NORTH SYDNEY.

North Sydney is the terminus of the Intercolonial Railway, 5 miles from N. Sydney Junction.

Population.—About 4,700.

Exports.—Coal, fish, hides, and general produce.

Accommodation.—There is a patent slip with two cradles of 100 and 96 ft. respectively, and lifting powers 250 and 200 tons. The anchorage is good anywhere off the wharves of the town, outside a line joining the English Church and Shingle Point; within that line there are shoals. The depth of this anchorage is from 5 to $8\frac{1}{2}$ fathoms, over mud bottom, and there is sufficient depth for large vessels all the way to the bridge, between which and the town is the most secure part of the harbour. At North Sydney there is from 15 to 25 ft. water at the wharves. All ordinary repairs, not requiring a dry dock, can be effected. There are two coal staithe capable of shipping coal at the rate of 150 to 200 tons per hour each. Good facilities for discharging ballast.

Port Charges.—Same as at Sydney. Supplies and stores of all kinds can be obtained.

ORWELL BAY.

Orwell Bay, in lat. $46^{\circ}6'$ N., long. $62^{\circ}55'$ W., is situated on Hillsborough Bay.

Accommodation.—The water area is 400 acres, and the depth on the bar at high ordinary springs is 19 ft., and at high ordinary neaps 17 ft. The rise and fall at ordinary springs is 8 ft. The port gives good anchorage. Inside the bar there is about 10 ft. more water than on the bar. Vessels drawing 18 ft. can reach the outer end of the wharf at high water ordinary springs. Above China Point, Vernon River is crooked and narrow. Vessels of 10 to $10\frac{1}{2}$ ft. can load at the bridge. In all cases shipping for Orwell Bay should take a pilot, and should not be in Orwell after November 25, the harbour then being liable to be closed by ice during a few hours of cold N.W. or W. winds.

OUELLE.

Ouelle, in lat. $47^{\circ}25' N.$, long. $69^{\circ}59' W.$, is about 65 miles below Quebec.

Exports.—Timber and deals.

Accommodation.—The anchorage is about 1 mile off the shore, in about 5 to 9 fathoms, on a blue-clay bottom, and about 4 miles from the place where the timber is shipped. Ships anchor opposite a Government wharf, where the Custom House and Telegraph Office is stationed. At high spring tides vessels of 15 ft. draught can come up the river to the bridge at the village. From June 1 to the middle of September this is considered a safe place.

Entrance and clearance can be effected, as there is a collector of Customs stationed here.

Pilotage.—Pilots can be obtained at Bic Island at two-thirds of the Quebec rates.

Port Charges.—Hospital Dues:—2 c. per reg. ton. No harbour or other dues.

Pro Forma Charges on a vessel of 500 tons reg. :—

	Dols.	c.
Sick Mariners' Fund	10	00
Consul's fees	8	50
Clearance	5	00
	23	50 = £4 16s. 8d.

PARRSBOROUGH.

Parrsborough, in lat. $45^{\circ}23' N.$, long. $64^{\circ}22' W.$, is situated at the head of the Bay of Fundy, on the River Parrsborough.

Population.—2,705.

Exports.—Lumber and coal.

Accommodation.—This is a large and safe harbour of over 50 acres. The depth at the entrance at ordinary springs high water is 20 ft., low water nil. The Railway Company's wharf is 700 ft. long, with from 15 to 20 ft. alongside at high water, and nil at low. There are seven staithes on the wharf, for the shipment of coal, with a working capacity of from 50 to 60 tons each per hour. The bottom of the harbour is mud. There are several private wharves. Vessels must be well found in ground tackle, and a kedge anchor is indispensable, as the river is narrow at the head, though at the coal wharf it is wide. The channel has been deepened from the lighthouse to the coal wharf by 3 to 4 ft. Marine blocks have also been established to accommodate vessels 235 ft. in length. This is a good coaling place. Repairs are done cheaply. Provisions and water are abundant and moderate in price.

Pilotage.—Not compulsory. 1 dol. to 2 dols. per foot according to the distance at which the vessel is boarded. Steamers pay 50 c. per ton additional.

Port Charges.—Sick Mariners' Fund:—2 c. per reg. ton. **Harbour-master's Fee:**—From 50 c. to 5 dols. according to the tonnage of the vessel.

Coal:—Screened, 3 dols. per ton f.o.b. No wharfage charge at the coal wharf.

Canada.

PASPEBIAC.

Paspebiac, in lat. 48°4' N., long. 65°13' W., is on the north side of Chaleur Bay.

Accommodation.—There is an excellent roadstead here, with good anchorage ground in 6 fathoms. The port is chiefly frequented by vessels engaged in cod-fishing. Good water can be obtained, and general supplies in moderate quantities.

Pilotage.—Vessels going west can obtain pilots here from Dalhousie, Campbelltown, Bathurst, etc.

Port Charges.—Sick Mariners' Fund:—2 c. per reg. ton. **Harbour-master's Fee:**—From 1 to 5 dols. according to the size of the vessel.

PICTOU.

Pictou is in lat. 45°41' N., long. 62°40' W.

Population.—About 3,500.

Imports.—Iron ore, and general merchandise.

Exports.—Coal and lumber.

Accommodation.—Pictou harbour is one of the best in the Gulf, and there is now a depth of 30 ft. at high water, and 25 ft. at low water on the bar at ordinary tides.

Granton Wharf.—Length, 436 ft.; depth at high ordinary springs, 24 ft. There are six shoots capable of discharging 200 tons per hour each.

Vale Wharf.—Length, 450 ft.; depth at high ordinary springs, 27 ft. The Vale Wharf has five shoots which can run 50 tons per hour each when all are simultaneously in operation. Working separately each can run 100 tons per hour. There are also four wharves belonging to the Inter-colonial Railway of Canada, which are 600, 600, 600, and 200 ft. long each, and have a depth at high ordinary springs of 24, 30, 30, and 20 ft. respectively. The difference between high and low ordinary spring tide is 6 ft. There are four coal mines worked in the vicinity.

There are two patent slips for vessels of 800 and 1,200 tons. There are two shipbuilding yards where ships to 1,200 tons are built.

Pilotage.—Vessels of 1,000 tons and upwards 2½ c. per reg. ton in; 2 c. per reg. ton out. After coming-to in the harbour, all vessels requiring the services of pilots in going up to the loading wharves pay an additional sum of 25 c. per ft. draught of water, and the same coming down. Vessels bound in, and spoken to by a pilot, pay half pilotage if his services are not required. Vessels bound out, and not requiring the services of a pilot, pay half pilotage to the pilotage authority. Vessels making the harbour are free from compulsory pilotage inside an imaginary line drawn from Cole's Point to McKenzie's Head. Good pilots can always be obtained.

Port Charges.—Harbour Dues:—1½ c. per reg. ton. **Hospital Dues:**—2 c. per reg. ton. **Wharfage:**—On goods landed, 1 c. per bl. bulk. **Commission:**—2½ per cent. **Labour:**—1 dol. 25 c. to 1 dol. 50 c. per day. **Ballast:**—50 c. per ton. Discharging and hauling away from the ship, 18 c. to 25 c. per ton. **Steam Towage:**—2½ c. per ton from outside; tugs in the harbour for mooring, 5 dols., or according to agreement. **Water:**—½ c. per gallon put on board. Coal and provisions cheap. **Stevedore:**—

Canada—Pictou (*continued*).

Trimming a 3 hatch vessel, clear hold, 6 c. per ton; ditto, lower deck beams, 7 c. per ton. Trimming self-trimming steamers, 3 c. per ton; ditto bunkers of any steamer by arrangement; ditto 3 hatch vessel, double deck, 8 c. per ton.

Pro Forma Charges on a steamer of 1,350 tons loading a cargo of lumber :—

	Dols.	c.
Sick Mariners' Fund	27	00
Harbour dues	20	25
Bill of health	1	00
Mercantile Marine Office	00	60
Pilotage authority Pictou district	60	75
Brokerage	25	00
	134	60 = £27 13s. 10d.

NEW GLASGOW, a place where vessels of 1,500 tons are built, is about 8 miles above the loading place.

PORT HASTINGS.

Port Hastings, in lat. 45°42' N., long. 61°18' W., is on the Strait of Canso.

Exports.—Coal and fish.

Accommodation.—There is a depth at high water of 32 ft., and at low water of 26 ft. at the pier, which is 480 ft. long.

There are 20 chutes for loading coal, each with a pocket of 200 tons capacity. There are all modern facilities for bunkering and loading vessels drawing up to 32 ft.

Pilotage.—Not compulsory.

Port Charges.—**Labour:**—2 dols. per day of nine hours. **Boat Hire:**—25 c. per hour. **Brokerage:**—1 dol. **Harbour Dues:**—For vessels over 700 tons, 5 dols.

PORT HAWKESBURY.

Port Hawkesbury, in lat. 45°33' N., long. 61°19' W., is on the Strait of Canso, 3 miles from Port Hastings.

Accommodation.—There are three good piers, all of which have at least 20 ft. of water at low tide. The entrance to the tidal harbour has 34 ft. of water at high tide, and 28 ft. at low. The anchorage is good on soft mud. There are three patent slips to take vessels of 1,000, 200, and 130 tons respectively.

PORT MEDWAY.

Port Medway is in lat. 44°7' N., long. 64°34' W.

Population.—About 700.

Exports.—Lumber, fish, and wood pulp.

Accommodation.—Vessels drawing 30 ft. of water can safely enter or leave the port. This harbour is considered one of the best and safest on the south coast of Nova Scotia. There is good safe anchorage anywhere in the harbour after passing the lighthouse, which is situated at the mouth of the river. A tug can be obtained at any time from Liverpool, 10 miles distant. Small spars can be had, and repairs can be effected.

Canada—Port Medway (continued).

Pilotage.—There are pilots for this port, and, on account of the shoals and rocks at the entrance, it would be advisable for strangers coming here to take one.

Vessels 120 to 300 tons, 6 dols. in, 4 dols. out; 301 to 400 tons, 7 dols. in, 5 dols. out; 401 to 600 tons, 9 dols. in, 6 dols. out; over 600 tons, 12 dols. in, 8 dols. out.

Port Charges.—**Custom House Fees** :—1 dol. **Harbour Dues** :—1 c. per reg. ton. **Hospital Dues** :—2 c. per reg. ton. **Loading** :—Deals, 70 c. per standard; boards, 30 c. per 1,000. **Discharging Ballast** :—20 c. per ton. As the exporters of lumber have their own wharves there is no charge for wharfage.

PORT MOODY.

Port Moody is in lat. 49°15' N., long. 122°54' W.

This port is now of no importance, the wharves which existed when it was the Pacific terminus of the Canadian Pacific Railway having been dismantled. There is no shipping.

PUGWASH.

Pugwash is in lat. 45°50' N., long. 63°38' W.

Population.—700.

Exports.—Timber and agricultural produce.

Accommodation.—The depth on the bar is 14 ft. at low water ordinary spring tides; springs rise 7 ft., neaps 4 ft. Vessels lie securely moored in a small land-locked basin, with a depth of 6 fathoms. Vessels drawing 22 ft. can come here.

There are four wharves at which vessels can discharge ballast. There are also three Government wharves where vessels load dry lumber.

Pilotage.—

	Inwards. Outwards.	
	Dols.	Dols.
300 to 400 tons	14	12
401 „ 500 „	16	14
501 „ 600 „	17	15
601 „ 700 „	18	16
701 „ 800 „	19	17
801 „ 900 „	20	18
901 tons and upwards	21	19

Port Charges.—**Towage** :—7 c. per reg. ton, in and out. **Sick Mariners' Fund** :—2 c. per reg. ton. **Stevedore** :—Loading, 90 c. per standard. **Harbour-master's Fee** :—300 to 400 tons, 2 dols. 50 c.; 401 to 500 tons, 3 dols.; 501 to 700 tons, 4 dols.; 701 tons and upwards, 5 dols. **Wharfage** :—Up to 400 tons, 8 dols.; 500 tons, 10 dols.; over 500 tons, 12 dols. **Ballast** :—Taking away from the ship, 5 dols. per day; vessels generally discharge ballast by hand, when hoisted with two horses, 3 dols. 50 c. additional.

Pro Forma Charges on a steamer of 1,640 tons :—

	Dols.	c.
Cash to captain	35	00
Stevedore, loading 1,036½ standards, at 90 c. per standard	932	85
Custom House articles	00	60
Sick Mariners' Fund	32	80
Clearance	2	00
Butcher's bill	55	10
Water	7	50

Carried forward . . . 1065 85

Canada—Pugwash (*continued*).

	Dols.	c.
Brought forward	1065	85
Pilotage	40	00
Tugboat	25	00
Telegrams	5	25
Brokerage	10	00
Harbour-master's fee	5	00
Insurance policy	1	00
Commission, 2½ per cent. ; insurance, 1½ per cent.	45	72

1,197 82 = £246 9s. 4d.
QUEBEC.

Quebec is in lat. 46°48' N., long. 71°15' W. Distance from Liverpool 2,634 miles.

Population.—68,840.

Imports.—Dry goods, groceries, salt, coal, hardware, liquors, etc.

Exports.—Timber, deals, grain, etc.

Accommodation.—Quebec harbour is safe and commodious. The largest vessels can lie alongside the wharves. If vessels are not carefully anchored in the river before going alongside, and a gale of wind should arise, a good lookout should be kept on board, and a second anchor ready to let go in time.

The Louise Docks are situated on the point formed by the confluence of the Rivers St. Lawrence and St. Charles, being bounded on the north by the St. Charles River, and on the east by the St. Lawrence.

The outer or tidal basin has a water area of 20 acres. The basin averages 900 ft. in length, 800 ft. in width, and has an entrance 195 ft. wide. There is 3,200 ft. of quayage with a depth alongside, at low water ordinary springs, of from 25 to 30 ft. The depth at the entrance at ordinary springs is 43 ft. ; at ordinary neaps, 37 ft. The rise and fall of the tide at ordinary springs is 18 ft. The sides of the tidal basin are formed by the St. Lawrence face of the breakwater (800 ft.) and the St. Lawrence face of the Pointe-à-Carcée wharf (600 ft.) respectively. At each there is over 35 ft. of water at low tide.

The Princess Louise Wet Dock has a water area of 36 acres. The dock is 2,300 ft. long, 600 ft. wide (average), has 2,200 ft. of quayage with 22 ft. alongside, and 1,100 ft. with 27 ft. alongside. The entrance is 66 ft. with 36 ft. on the sill at ordinary spring tides, and 30 ft. at ordinary neap tides.

The embankment is about 4,000 ft. long, and 330 ft., wide ; the cross-wall 800 ft. long, and 150 ft. wide.

Warehouses and freight sheds have been erected on the embankment and cross-wall for the protection of perishable goods.

The railway lines are so arranged that vessels can be discharged into or loaded directly from the cars.

There is a breakwater extension, 2,250 ft. in length, having a depth of over 45 ft. of water at low tide, suitable for the largest vessels. There are freight sheds and railway tracks on it. Pointe-à-Carcée wharf, to the west of the wet dock, has an entrance 580 ft. long, with a large freight shed running its entire length ; the depth alongside is over 45 ft. at low tide.

The wet dock, where the water remains at a constant level, affords, for this reason, special facilities for loading or unloading cheaply and expeditiously, into or out of the railway cars, no extra charge being made for entering this basin. The northern quay wall, facing on to the River St. Charles,

Canada—Quebec (continued).

is for the use of river craft, and the lightering of lumber and other cargoes coming down by rail.

Special portions of the embankment have been set apart for the discharging of coal, and large areas are reserved for cattle yards, grain elevators, and storage.

Navigation opens in April, and is closed about the beginning of December. The following are the dimensions of the dry docks :—

Harbour Commissioners' dry dock is 600 ft. long, 61½ ft. wide at the entrance, and 25½ ft. on the sill.

Davie's floating-dock No. 1 is 236 ft. long, 41 ft. wide at the entrance, and 13 ft. on the sill.

Davie's floating dock No. 2 is 180 ft. long, 39 ft. wide at the entrance, and 13 ft. on the sill.

Russell's floating dock is 225 ft. long, 41½ ft. wide at the entrance, and 15½ ft. on the sill.

Length given is over all; width is at ordinary springs level; depth on the sill is at ordinary high springs.

There is a patent slip to raise 500 tons, and a 200 ft. gridiron. There are loading berths at the cove for timber, and at Cap Blanc and Priest's deep water booms.

Harbour Regulations.—All vessels coming to any of the wharves, docks, piers, or slips must be reported at the Wharfinger's office on arrival.

Vessels must go to berths assigned to them by the harbour master. The Union Jack must be hoisted at the peak on arrival in the harbour.

Vessels are not allowed to anchor in that part of the harbour bounded on the N. by a line drawn from the S.E. corner of Crawford's wharf to the S.W. corner of Barras Wharf, and on the S. by a line drawn from the centre of the Champlain Market Hall to the N.W. corner of Simpson's wharf, being a distance of about 400 yards. These limits are indicated by sign-boards in daytime, and by red lights at night.

All vessels passing up or down the harbour must keep at least half a cable's length from the front of the wharves, and their speed must not exceed 6 knots an hour.

Ballast may be discharged into that part of the River St. Lawrence which lies between the River Etchemin and a line formed by a beacon on the hill in rear of Diamond Harbour, and the centre of the Martello Tower above it, and a line drawn from the W. side of the mouth of the River Cape Rouge to the W. side of the mouth of the River Chaudiere, but no ballast may be discharged in any place within the harbour of Quebec where there is not at least 15 fathoms of water at neap tides on the N. shore, or 10 fathoms on the S. shore.

Vessels are not allowed to anchor within 2 cable lengths of any of the wharves in the harbour.

Vessels are not allowed to moor alongside the Pointe-à-Carcée wharf, or breakwater.

No vessels are allowed to anchor at the entrance of, or in the channel extending between the bank and the coves at L'Anse-des-Meres and upwards in the harbour.

Steamers are not allowed to use or burn wood for the purpose of raising or keeping up steam when within the limits of the harbour.

Vessels must report outward cargo and pay dues before leaving the harbour.

Steamers must have gangways and lights on gangways at night. Vessels

Canada—Quebec (*continued*).

loading or unloading must cover up hatchways when work is stopped or completed, and a good canvas must be used in order to prevent any portion of cargo falling into the water.

Watch must be kept on board vessels in the harbour.

Explosives, except those kept for the necessary use of vessels, are not allowed to be brought into the Louise Docks or to any wharves in the harbour without the permission of the harbour master.

Refuse must not be thrown on the wharves or into the harbour.

Port Regulations.—No ballast, dirt, or refuse of any kind to be thrown into any part of the port below the eastern limits of the harbour where there are not at least 12 fathoms of water at low tide, or above the western limits of the harbour.

Vessels are not allowed to anchor in the channel opposite Crane Island. All vessels loading or unloading opposite Crane Island must be anchored at a distance not less than half a mile from the low water mark.

Vessels aground at night must show three lights.

The entrance gates to the wet dock are generally opened one hour before, and remain open until, high water.

No sea-going vessels may enter or leave the wet dock without the assistance of a tugboat.

All steam vessels while in the wet dock must have sufficient steam to their winches for the purpose of moving when required to do so.

Time Signals.—Chronometers can be checked. A ball is hoisted half way up a mast on the Citadel 15 minutes before the signal, and close up 5 minutes before. The ball is dropped at 1 h. 0 m. 0 s. mean time of the meridian of 75° W. long., equal to 6 h. 0 m. 0 s. Greenwich mean time, and 1 h. 15 m. 9·7 s. local mean time.

Pilotage.—Pilots can always be found off Father Point.

Rates of pilotage for the harbour of Quebec and below, for each foot of draught of water :—

	From May 1 to Nov. 10.	From Nov. 10 to Nov. 19.	From Nov. 19 to March 1.	From March 1 to May 1.
From Bic Island or any place below the anchorage of Brandy Pots, off Hare Island, to anchorage or mooring ground in the basin or harbour of Quebec	Dols. c. 3 87	Dols. c. 4 95	Dols. c. 6 2	Dols. c. 4 41
From anchorage ground at the Brandy Pots, off Hare Island, or any place above the said anchorage ground, and below St. Roch's Point, to anchorage or mooring ground in the basin or harbour of Quebec	$\frac{2}{3}$ of this sum.	$\frac{2}{3}$ of this sum.	$\frac{2}{3}$ of this sum.	$\frac{2}{3}$ of this sum.
From St. Roch's Point, or any place above this point and below the Pointe-aux-Pins, on Crane Island, to anchorage or mooring ground in the basin or harbour of Quebec	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.
From the Pointe-aux-Pins, or Crane Island, or any place below St. Patrick's Hole, to anchorage or mooring ground in the basin or harbour of Quebec	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.
From the anchorage or mooring ground in the basin or harbour of Quebec to Bic Island, or the place where the pilot shall be discharged in the river below Quebec.	Dols. c. 3 40	Dols. c. 4 46	Dols. c. 5 54	Dols. c. 3 93

Canada—Quebec (continued).

QUEBEC TO MONTREAL.

	Per foot.	
	Upwards.	Downwards.
	Dols. c.	Dols. c.
Quebec to Portneuf, in tow or propelled by steam	0 50	0 50
Any sea-going vessel propelled by steam	0 62½	0 62½
Any sea-going vessel under sail	1 05	0 70
Quebec to Three Rivers, in tow or propelled by steam	1 50	1 50
Any sea-going vessel propelled by steam	1 75	1 75
Any sea-going vessel under sail	2 60	1 90
Quebec to Sorel, or any place above Three Rivers and below Sorel, any vessel in tow or propelled by steam	1 50	1 50
Any sea-going vessel propelled by steam	1 87½	1 87½
Any vessel under sail	3 15	2 10
Quebec to Montreal, or any place above Sorel, any vessel in tow or propelled by steam	2 00	2 00
Any sea-going vessel propelled by steam	2 50	2 50
Any vessel under sail	4 20	2 80
Harbour of Montreal to Sorel, or any place above Sorel or below Hochelaga, and from Sorel or any place above Sorel and below Hochelaga to the harbour of Montreal	1 00	1 00
From wharf to wharf in limits of Montreal harbour or to Lachine Canal, or from foot of current or from Longueuil to harbour, or vice versa, 5 dols.		

TARIFF FOR TOWING VESSELS BELOW QUEBEC, IN ADDITION TO THE TOWAGE TO OR FROM MONTREAL.

	Quebec to Pillars. Dis. 41 miles.	Quebec to foot of Traverse. Dis. 52 miles.	Quebec to Brandy Pots. Dis. 100 miles.	Quebec to Bic. Dis. 145 miles.	Quebec to Fath. Point. Dis. 160 miles.
	Dols. c.	Dols. c.	Dols. c.	Dols. c.	Dols. c.
VESSELS OF—					
300 to 400	55 00	75 00	110 00	140 00	160 00
401 „ 500	60 00	80 00	115 00	150 00	170 00
501 „ 600	65 00	90 00	120 00	155 00	175 00
601 „ 700	75 00	95 00	130 00	160 00	180 00
701 „ 800	80 00	100 00	135 00	170 00	190 00
801 „ 900	90 00	110 00	140 00	175 00	195 00
901 „ 1,000	95 00	115 00	150 00	180 00	200 00
1,001 „ 1,100	100 00	120 00	155 00	190 00	210 00
1,101 „ 1,200	110 00	130 00	160 00	195 00	215 00
1,201 „ 1,500	115 00	135 00	170 00	200 00	220 00
1,501 „ 1,800	120 00	140 00	180 00	205 00	225 00

Employed by the day the charge is as follows : First day, 250 dols. ; every subsequent day, 200 dols. Employed by the hour : First hour, 25 dols. ; every subsequent hour, 12 dols. 50 c.

After the first day of November a special arrangement must be made for towage up or down.

Vessels towing only to or from Quebec to pay 50 per cent. additional.

Port Charges.—Tonnage Dues :—Vessels coming from or trading to ports outside the Dominion of Canada : Discharging, ballast, 5 c. per ton ; discharging or loading cargo, 5 c. per ton. **Harbour Dues :—**Steamers and sailing vessels entering and using the harbour, which do not pay tonnage dues, for every day of 24 hours, up to 1,000 reg. tons, ½ c. per reg. ton per day ; over 1,000 reg. tons, ¼ c. per reg. ton per day.

Moorage :—Vessels of 50 tons reg. or under, 50 c. per day ; each additional 50 tons over and above the first 50, 25 c. per day. The time allowed for loading or discharging a full cargo is 20 days, and the following rates are charged : Vessels of 150 reg. tons, 15 dols. ; 300, 27 dols. ; 500, 38 dols. ; 700, 48

Canada—Quebec (continued).

dols. ; 1,000, 63 dols. ; 1,300, 78 dols. ; 1,600, 92 dols. ; 2,000, 113 dols. ; for every 50 reg. tons over and above 2,000 reg. tons, an additional 2 dols.

Wharfage :—On goods landed : Grain and seeds of all kinds, 5 c. per ton ; coal, coke, salt, ballast, cement, clay, earthenware, drain pipes, fire bricks, gypsum, lime, marble, and all other stones, phosphate, sand, slate, iron ore, whiting, and scoria blocks, $7\frac{1}{2}$ c. per ton ; on all goods, wares, and merchandise, except bullion and specie, not elsewhere specified, 13 c. per ton ; firewood, 6 c. per cord ; tan bark, 8 c. per cord ; railway ties, $\frac{1}{4}$ c. each ; spool wood, $\frac{1}{4}$ c. per bundle ; bricks (red), 5 c. per 1,000. All goods transhipped from one vessel to another will be charged half rates on the goods and full moorage on the vessels, whether alongside of the wharf or anchored in the docks. Lumber and wood pulp, free. Weighing coal, 6 c. per ton ; ditto salt, 10 bags to the ton, 8 c. per ton.

Labour :—Holders and swingers, 4 dols. per day ; winchers, 3 dols. per day ; boys on stage, 2 dols.

Water :—Free.

Provisions :—Pork, 13 dols. per barrel ; flour, 5 dols. per barrel.

Commission :—Procuring freight, $2\frac{1}{2}$ per cent. ; collecting ditto, $2\frac{1}{2}$ per cent. Disbursing without funds, 5 per cent. ; with ditto, $2\frac{1}{2}$ per cent.

Dock Charges :—20 c. per reg. ton. Ships are liable for moorage and wharfage, unless stipulated.

RICHIBUCTO.

Richibucto, in lat. $46^{\circ}40'$ N., long. $64^{\circ}55'$ W., is about 3 miles within the mouth of the river of the same name. Rexton is about 2 miles higher up.

Population.—About 1,000.

Imports.—Coal and salt.

Exports.—Lumber, preserved lobsters, and fresh fish.

Accommodation.—Vessels drawing more than 14 ft. cannot cross the bar. Loading outside is dangerous in the winter months, as with north-east winds a heavy swell rolls in, which makes it impossible to work, and anchors are sometimes lost, but from May to August large vessels can load outside in perfect safety. Vessels inside load in 15 ft. water alongside the wharves. There is a depth of 14 ft. over the bar at high water, and of $9\frac{1}{2}$ ft. at low water. A steam-tug can be had if necessary. There are ten wharves from 140 ft. and upwards in length which extend out to the 40 ft. channel.

Pilotage.—Pilots will always be found off the entrance, and a stranger should always employ one. Rates, in or out, 1 dol. 50 c. per foot.

Port Charges.—**Tonnage Dues** :—2 c. per ton. **Wharfage** :—4s. 3d. per day. **Stevedore** :—From 90 c. to 1 dol. per standard, for rafting loading, and stowing outside the bar, and 1 dol. inside. **Harbour-master's Fee** :—From 50 c. to 5 dols. according to size of vessel. **Sick Mariners Fund** :—2 c. per ton. **Commission** :—On disbursements, $2\frac{1}{2}$ per cent.

RICHMOND BAY.

Richmond Bay is in lat. $46^{\circ}34'$ N., long. $63^{\circ}44'$ W. The entrance to it is 31 miles nearly S. $\frac{1}{4}$ W. from North Cape in Prince Edward Island.

Accommodation.—The bar is about 150 to 180 yards broad and has 12 ft. at low water. Rise and fall, 3 ft. neaps ; springs 5 ft.

Canada—Richmond Bay (*continued*).

Anchorage is good (sand bottom) outside the bar, with winds south to west, but rough and very heavy sea with a northerly or easterly wind. There is a buoy in the fairway leading in over the bar, and a spar buoy leading into the channel, also a spar buoy on the middle ground. There is good anchorage under Fish Island, or off the breakwater. This harbour is generally closed by ice about December 1 and open again about the first week in May.

Pilotage.—Not compulsory. 80 c. per foot in or out. There are several shoals in the bay, and vessels bound to any of the rivers should take a pilot.

Port Charges.—**Labour** :—80 c. per day. **Ballast** :—Stone 50 c. per ton. Sand 25 c. per ton. **Wharfage** : $\frac{1}{3}$ c. per ton per day. Water plentiful.

RIMOUSKI.

Rimouski, in lat. $48^{\circ}26'$ N., long. $68^{\circ}32'$ W., is about 16 miles E. of Bic Island.

Population.—2,000.

Exports.—Deals and pulp.

Accommodation.—There is a landing pier, with 12 ft. of water at the end at low water springs. The roadstead has 4 to $6\frac{1}{2}$ fathoms water, with excellent holding ground, and is sheltered from W. by N., round by S. to E.N.E. The anchorage is about half a mile from the pier.

There is a telegraph station here.

Pilotage.—A pilot is unnecessary with a good chart.

Port Charges.—**Bill of Health** :—If required, 1 dol. **Sick Mariners' Fund** :—2 c. per ton. **Endorsing Articles** :—1 dol. **Entering and Clearing** :—1 dol. **Water** :—Fresh water can be had for the taking, but if brought alongside, costs 50 c. a cask.

ROCKLAND.

Rockland, in lat. $45^{\circ}57'$ N., long. $64^{\circ}30'$ W., is a small port on the west bank of the River Mamramcook, almost opposite the town of Dorchester.

Export.—Lumber.

Accommodation.—Vessels lie aground alongside the wharf at low water, soft mud bottom. Springs rise 44 ft., neaps 37 ft. Vessels drawing 17 ft. can float off from the wharf at ordinary tides. About a mile-and-a-half from the wharf ships can always lie afloat in five fathoms.

Pilots can be obtained off Folly Point, at the mouth of the river. There is a strong tide of from 3 to 4 knots. There is a patent slip. The only charge made is for wharfage at 2s. 6d. per day.

SACKVILLE.

Sackville is in lat. $45^{\circ}54'$ N., long. $64^{\circ}22'$ W.

Population.—2,500.

Imports.—Oak, pitch pine, and coal.

Canada—Sackville (*continued*).**Exports.**—Lumber and agricultural produce.**Accommodation.**—The usual anchorage for large vessels is in Cumberland Basin, in from 4 to 5 fathoms, about 5 miles from Sackville, cargo being brought alongside in lighters. There is a depth of 20 ft. at high tide and 15 ft. at low tide alongside the wharves; vessels lay aground at low water. Vessels should always be moored, as the velocity of the tide is very great.**Pilotage.**—Compulsory. Rates, 4 c. per reg. ton in; 2 c. per reg. ton out.**Port Charges.—Wharfage:**—For a vessel of 300 tons, 1 dol. 60 c. per day. **Entrance Fees:**—25 c. **Clearance Fees:**—25 c. **Towage:**—20 dols. in and out. **Ballast:**—1 dol. per ton. **Labour:**—1 dol. 50 c. per day. **Brokerage:**—2 dols. 50 c. per vessel. **Harbour-master's Fee:**—2 dols. **Hospital Dues:**—2 c. per reg. ton. **Stevedore:**—1 dol. 50 c. to 2 dols.**DORCHESTER**, about 6 miles W. of Sackville, on the Mamramcook River, and **HILLSBOROUGH**, on the River Petit Coudiac, about 7 miles W.N.W. of Dorchester, have about the same depth of water as Sackville, and the expenses are almost the same.**Pro Forma Charges** on a steamer of 353 reg. tons, with a cargo of 316,000 superficial feet of pine:—

	Dols. c.	
Port charges	5	20
Towage in	20	00
Towage out	15	00
Pilotage in and out	20	00
Harbour dues	2	50
Sick Mariners' Fund	7	06
Wharfage	25	00
Stevedoring and labour in discharging from vessel at wharf, 45 c. per 1,000	142	20
	236	96 = £48 15s. 2d.

ST. ANDREW.

St. Andrew, in lat. 45°9' N., long. 67°6' W., is situated on Passamaquoddy Bay.

Imports.—Coal, salt, and general merchandise.**Accommodation.**—The tidal harbour has a water area of 40 acres. The depths available for vessels entering the port, at high water ordinary springs, is 28 ft., neaps 22 ft. There is 800 ft. of quayage with a depth alongside at ordinary high springs of from 10 to 25 ft., and at low tide nil. The anchorage is good on a mud bottom. There is no bar.**Pilotage.**—1 dol. per foot, in or out; removing a vessel from the harbour to the ballast ground, 3 dols.; removing a vessel from one loading place to another in the harbour, 200 to 300 tons, 5 dols.; 301 to 400 tons, 6 dols.; above 400 tons, 8 dols.**Port Charges.—Customs Fees:**—2 c. per reg. ton. **Harbour Dues:**—200 to 300 tons, 3 dols.; 400 tons and above, 4 dols. **Port Warden:**—1 dol. 50 c. per visit.

Canada.

ST. GEORGE (New Brunswick).

St. George, in lat. $45^{\circ}10'$ N., long. $66^{\circ}51'$ W., is about 4 miles E. of Digdeguash. The town of Magaguadavic is about 4 miles up the river.

Population.—700.

Imports.—Coal, dry goods, hardware, salt, kerosene, etc.

Exports.—Deals, boards, laths, shingles, spruce, wood pulp, fish—fresh and cured—granite, building stone, agricultural produce, etc.

Accommodation.—The harbour is snug, well sheltered, and can accommodate about twenty ships. There is a depth of 33 ft. at high water, 7 ft. at low water, and 6 ft. at lowest spring tides. There is a wharf here alongside which vessels up to 400 tons can lie, but not always afloat. Vessels entering can anchor in 5 to 10 fathoms of water, about a mile from the shore, and heave their ballast overboard. The harbour master will then bring the vessel in and moor her. Vessels moor with both anchors ahead, and two hawsers astern, made fast to the wharves, about 30 to 60 fathoms off, ships lying afloat at all times. The services of a steam-tug can be had if required. The steamer running between St. John and St. Stephen calls off the mouth of the river, and is met by a steam-tug from Magaguadavic, on board which passengers and goods are transferred. Vessels seldom bring cargoes direct to St. George, but generally discharge at St. Stephen, about 25 miles distant. Provisions, such as eggs, chickens, potatoes, beef, mutton, etc., are cheap and plentiful. Telegraphic communication to all parts. The Canadian Government have a dredger at work deepening and improving the harbour.

Pilotage.—Compulsory. Pilots can be obtained off Grand Manan. Steamers, 6 c. per reg. ton; sailing ships, 5 c. per reg. ton.

Port Charges.—**Harbour Dues** :—1 c. per reg. ton up to 700 tons.

Clearance Fees :—25 c. **Bill of Health** :—1 dol. **Sick Mariners' Fund** :—2 c. per reg. ton. **Towage** :—For a vessel of 400 tons, about 40 dols. **Ballast** :—1 dol. per ton. **Labour** :—2 dols. to 2 dols. 50 c. per day. **Brokerage** :—From 25 c. to 1 dol. **Stowing** :—75 c. to 1 dol. per standard of 1,980 superficial feet.

Pro Forma Charges on a steamer of 400 tons register, with a cargo of coal in, and ballast out, drawing 17 ft. loaded :—

	Dols.	c.
Harbour dues, 1 c. per reg. ton (up to 700 tons)	4	00
Brokerage	0	75
Pilotage in and out	24	00
Towage	40	00
Boat hire, according to agreement, say	4	00
Bill of health	1	00
Clearance	0	25

74 00 = £15 4s. 6d.

ST. JOHN (New Brunswick).

St. John, in lat. $45^{\circ}18'$ N., long. $66^{\circ}5'$ W., is situated at the mouth of the river of the same name. Distance from Liverpool, 2,700 miles.

Population.—42,000.

Imports.—British manufactures and West Indian products.

Exports.—Lumber, fish, lime, pulp wood, and agricultural produce.

Canada—St. John (New Brunswick) (continued).

Accommodation.—The harbour has a water area of 180 acres, is safe, commodious, always accessible, and the navigation is never impeded by ice. The depth of water at the entrance is 21 ft. at low water ordinary springs, and 47½ ft. at high water ordinary springs. The anchorage off the city is in from 7 to 20 fathoms. There is 5,000 ft. of quayage with 17½ to 29½ ft. alongside at low springs, and from 44 to 50 ft. at high springs. Tides rise, neaps, 18 ft.; springs, 28 ft. The river is navigable for large vessels as far as the Falls, about a mile above the city, and for vessels under 200 tons as far as Fredericton, 84 miles up. The Government Railway Quay is 500 ft. long, with from 19 to 24 ft. alongside at low ordinary springs, and from 45 to 50 ft. at high ordinary springs. There is every facility for quick dispatch, railway tracks running through all warehouses from the main line, permitting loading and unloading to be done direct to and from the cars.

Wooden shipbuilding is carried on to a great extent, but the facilities for repairing iron vessels are not good.

CARLETON, on the western side of the harbour, possesses the same advantages as St. John. It is a freight terminus of the Canadian Pacific Railway and has a grain elevator.

Time Signals.—Chronometers can be checked. A ball is hoisted halfway up a mast, on the northern tower of the new Custom House, 15 minutes before the signal, and close up 1 minute before. The ball is dropped at 1 p.m. mean time of the 60th meridian of west longitude, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 0 h. 35 m. 45.9 s. local mean time.

Pilotage.—Rates for sailing vessels entering and leaving the port of St. John, N.B. :—

Inwards.—1st district, from Partridge Island to Musquash Head, bearing N.W., per foot draught of water, 1 dol. 50 c. 2nd district, from Musquash Head to Point Lepreau, N.W., per foot draught of water, 1 dol. 75 c. 3rd district, from the outside limit of the 2nd district to a boundary ranging from the North Head of Grand Manan to Liberty Point, bearing N.W. by W., North Channel; and from Machias Seal Island to Cape Sable Seal Island, bearing S.S.E., South Channel, per foot draught of water, 2 dol. 25 c.

Outwards.—From the harbour of the port of St. John, N.B., to outside of Partridge Island, per foot draught of water, 1 dol. 25 c.

Down the Bay of Fundy, when required, 2 dols. per foot draught of water over and above the 1 dol. 25 c. harbour pilotage outwards.

Moving in the harbour :—

	Dols.	c.
For vessels not over 100 tons	1	50
Over 100 tons, and not exceeding 200 tons	2	00
" 200 " 300 "	3	00
" 300 " 400 "	4	00

And 25 cents additional for every 50 tons such vessels may measure over 400 tons.

Steamers Inwards.—1st district, from Partridge Island to Musquash Head, bearing N.W., per foot draught of water, 2 dols. 2nd district, from Musquash Head to Point Lepreau, N.W., per foot draught of water, 2 dols. 50 c. 3rd district, from the outside limit of the 2nd district to a boundary ranging from the North Head of Grand Manan to Liberty Point, bearing N.W. by W., North Channel; and from Machias Seal Island to Cape Sable Seal Island, bearing S.S.E., South Channel, per foot draught of water, 3 dols.

Outwards.—From the harbour of the port of St. John, N.B., to the outside of Partridge Island, per foot draught of water, 1 dol. 75 c.

Canada—St. John (New Brunswick) (continued).

Down the Bay of Fundy, when required, 2 dols. 75 c. per foot draught of water, over and above the 1 dol. 75 c. harbour pilotage outwards.

Moving in the harbour :—

	Dols.	c.
For all steamers not exceeding 100 tons	2	00
Over 100 tons and not exceeding 200 tons	2	50
„ 200 „ „ „ 300 „	3	75
„ 300 „ „ „ 400 „	5	00

And 30 cents additional for every 50 tons a steamer shall measure over 400 tons.

It is understood that if a steamer drop two anchors in the harbour on arrival she is considered moored, and any removal is a transportation.

Port Charges.—Wharfage :—Vessels of 380 tons and under 400, 2 dols. per day, and 25 c. extra per day for every additional 50 tons.

Harbour-master's Fees :—Vessels of 550 tons and under 600, 3 dols. 75 c., and 25 c. extra for every additional 50 tons. **Anchorage Dues :—**Vessels of 550 tons and under 600, 3 dols. 50 c., and 25 c. extra for every additional 50 tons. **Stevedore :—**Loading deals 90 c. per standard. **Water :—**50 c. per 1,000 gallons. **Provisions :—**Can be obtained at moderate prices ; vegetables are cheap ; fresh beef, 4 to 8 c. per lb.

Pro Forma Charges on a steamer of 2,000 tons register, with a cargo of general merchandise in, and ballast out, drawing 20 ft. loaded, and 17 ft. light :—

	Dols.	c.
Harbour-master's fees	17	75
Anchorage dues	17	50
Harbour dues at 1 c. per ton	20	00
Brokerage	50	00
Pilotage inwards, 3 dols. per foot ; outwards, 1 dol. 75 c. per foot	90	00
Towage, 25 dols. per tow-boat	50	00
Boat hire	6	00
Wharfage, $\frac{1}{2}$ c. per ton per day	50	00
Stevedore, discharging, say, 5,000 tons at 35 c.	1,750	00

2,051 25 = £422 1s. 3d.

ST. MARY.

(See **Liscomb and St. Mary**, p. 874.)

ST. STEPHEN.

St. Stephen, in lat. 45°15' N., long. 67°20' W., is situated at the head of the tide waters on the northern bank of the St. Croix River, which flows into Passamaquoddy Bay. The city of Calais lies on the opposite bank of the St. Croix, and the two towns are connected by a bridge spanning the river, 400 ft. in length.

Population.—5,000, including the town of Milltown.

Imports.—Iron, salt, provisions, bread-stuffs. sugar, molasses, tea, tobacco, dry goods, etc.

Exports.—Deals, boards, timber, laths, shingles, farm produce, and manufactured goods.

Accommodation.—Vessels of 600 tons and under load alongside the wharves, and lie aground at low water in soft mud. Spring tides rise 26 ft. The "Ledge," an outport of St. Stephen, situated 4 miles below the town, has plenty of water for the largest ships to load afloat, and is

Canada—St. Stephen (continued).

capable of accommodating 500 ships, and is well sheltered. The bay is never closed by ice. Vessels of $18\frac{1}{2}$ ft. draught can load alongside the wharf, bottom of soft mud, so there is no danger if a vessel should ground. Railway communication with the United States and Canada, and telegraphic communication with all parts of the world.

Pilotage.—Pilots and steam-tugs can always be obtained if required, but it is seldom necessary to employ the latter to reach the "Ledge."

Port Charges.—Tonnage Dues:—Steamers, 2 c. per ton. **Towage:**—From the "Ledge," 7 c. per ton loaded; 5 c. per ton in ballast. **Fresh Water:**—Free. **Stevedore:**—3s. per standard. **Provisions:**—Plentiful and cheap, and all kinds of ship's stores can be procured at reasonable prices.

Pro Forma Charges on a steamer of 1,786 tons reg., coming in in ballast, and loading cargo:—

	Dols.	c.
Pilotage in and out	162	05
Harbour dues	23	50
Moorage	100	00
Sick Mariner's Fund at 2 c.	35	72
Brokerage fees	50	00
Customs work	10	00
Lighterage on broken stowage	23	07
Ship chandler's account	122	60
Stevedore, 1,480 stds. at 90 c. per std.	1,332	00
Tugboats	50	00
Cash to captain	100	00
Insurance on disbursements	10	00
Commission on advances at $2\frac{1}{2}$ per cent.	50	23

2,069 17 = £425 15s. 1d.

ST. THOMAS (Quebec).

St. Thomas in lat. $46^{\circ}58'$ N., long. $70^{\circ}35'$ W., is about 33 miles below Quebec, and is situated on the S. side of the St. Lawrence river, opposite Crane Island.

Exports.—Spruce deals.

Accommodation.—Vessels drawing not over 16 ft. can load inside the river St. Thomas, or Du Sud, but as they would ground at each tide, they generally lie 2 or 3 miles off the town, in 5 to 7 fathoms, where there is a perfectly safe anchorage. Cargo is brought alongside in boats.

The ballast ground is near St. Margaret Island. There is a Custom House officer to enter and clear vessels.

Pilotage.—Three-fourths of Quebec rate up, and two-thirds of Quebec rate down.

Port Charges.—Harbour-master's Fees:—

For every ship of	50 tons register or under	Dols.	c.
" over 50 tons .. and not over 100	100	0	50
" .. 100 tons 200	200	1	00
" .. 200 tons 300	300	1	50
" .. 300 tons 400	400	2	00
" .. 400 tons 500	500	2	50
" .. 500 tons 700	700	3	00
" .. 700 tons		4	00
" .. 700 tons		5	00

Towage:—Rates according to agreement, but vessels usually sail up and down. **Stevedore:**—Loading, 80 c. per standard. **Provisions:**—Cheap. **Fresh Water:**—Good, alongside.

Canada—St. Thomas (Quebec) (continued).

Pro Forma Charges on a steamer of 1,515 register tons :—

	Dols.	c.
Harbour dues	5	00
Sick Mariners' Fund, at 2 c. per reg. ton	30	30
Brokerage fees	50	00
Customs	5	00
Lighterage on broken stowage	11	01
Ship chandler's account	54	78
Pilotage	95	50
Stowage on 996 standards, at 80 c. per standard	796	80
Cash to captain	35	50
Commission, 2½ per cent.	24	60
Insurance and policy	11	29

1,119 78 = £230 8s. 2d.

SAULT AU MOUTON AND ESCOUMAIN.

Sault au Mouton and Escoumain, in lat. 48°19' N., long. 69°27' W., are loading places, situated on the N. shore of the St. Lawrence River, almost opposite Bic Island. They belong to one firm, and vessels are generally chartered to load at either, proceeding to Bic Island for instructions. The distance between them is about 15 miles.

Exports.—Deals and boards.

Accommodation.—There is good holding ground off each, and the largest ships can load in safety. The anchorage at Sault de Mouton is about 3¼ miles from the shore, on a sand and mud bottom; off Escoumain, vessels can anchor on a bank about half a mile off shore, in 7 to 10 fathoms at low water, whilst there is 30 to 50 fathoms close alongside. Four or five vessels can load here at the same time. It is quite safe from May to October inclusive.

Pilotage.—Inwards, 1 dol. 29 c. per foot draught; outwards, 1 dol. 13 c. per foot draught.

Port Charges.—**Quebec Hospital Dues** :—2 c. per reg. ton. **Clearance** :—5 dols. per vessel. **Labour** :—1 dol. 25 c. per day. **Stevedore** :—15 c. per St. Petersburg standard. **Commission** :—2½ per cent. on disbursements. **Bill of Health** :—1 dol. **Fresh Water** :—50 c. per 100 gallons.

SHEDIAC.

Shediac is in lat. 46°11' N., long. 64°32' W.

Population.—2,000.

Exports.—Lumber, fish, and potatoes.

Accommodation.—The port of Shediac is easy of access, and is the only one on the coast where vessels in distress can safely run to as a harbour of refuge. Vessels making the port will easily recognize it from the houses on Point Chêne. They should run into 5 fathoms of water, and there wait for a pilot. There is a depth of 18½ ft. at high water, 15½ ft. at low water, and 14½ ft. at lowest spring tides. Ships in ballast, not drawing over 14 ft., go alongside the wharf and discharge; if above that draught they must discharge over the side, alongside the bank. Vessels can load at the railway wharf to 16½ ft. Ships from 800 to 1,000 tons load inside to 18 ft., cargo being delivered alongside in rafts; if above that draught they have to move outside to 6 fathoms to complete loading. Boats are employed to

Canada—Shediac (*continued*).

bring the timber outside. In October and November strong easterly winds prevail, which make it rather difficult to load.

Pilotage.—Compulsory. 1 dol. 50 c. per foot, in and out.

Port Charges.—**Sick Mariners' Fund** :—2 c. per reg. ton. **Harbour-master's Fee** :—1 to 5 dols. **Stevedore** :—75 to 90 c. per standard. **Boats** :—If required to complete loading outside, carrying 40,000 superficial ft., 6 to 8 dols. per trip. **Labour** :—1 dol. 50 c. per man, per day. **Water** :—1 c. per gallon, delivered alongside. **Stowing** :—According to agreement. Supplies of all kinds can be obtained at reasonable prices.

SHEET HARBOUR.

Sheet Harbour is in lat. 44°50' N., long. 62°32' W.

Export.—Lumber.

Accommodation.—Sheet Harbour is almost landlocked, being quite safe in all winds, and can receive vessels of any draught. Vessels can load here up to 26 ft. There is telegraphic connection with all the principal lines and cable companies, and steamship communication with Halifax once a week.

Fresh water free by ship's boats. Fresh provisions can be obtained.

Port Charges.—**Tonnage Dues** :—2 c. per ton. **Stevedore** :—Steamers, loading, 1 dol. per standard ; sailing vessels, 80 c. to 1 dol. ; labour from crew, 1 dol. 25 c. per day.

Pro Forma Charges on a vessel of 600 tons :—

	Dols.	c.
Pilotage, in and out	34	80
Tonnage dues, 2 c. per ton	12	00
Custom House	2	00
Harbour-master	4	00
	52	80 = £10 17s. 3d.

SHELBURNE.

Shelburne is in lat. 43°47' N., long. 65°19' W.

Population.—1,500.

Imports.—Flour, food stuffs, hay, iron, hardware, and coal.

Exports.—Lumber, fish, etc.

Accommodation.—There is a depth of 20 ft. of water at the wharves at high tide, and 13 ft. at low tide. This is one of the best harbours in Nova Scotia, and is used as a port of call. It is 5 miles long, with an average width of 2½ miles ; the depth at the entrance, at high spring tides, is 40 ft. There is excellent anchorage in 6 fathoms, protected from all winds. It is very easy of access, and very safe. There are six wharves about 160 ft. long each. Railway connection with Halifax. **Ballast** :—40 c. per ton. **Labour** :—1 dol. 50 c. per day of 10 hours.

SHEMOGUE.

Shemogue is in lat. 46°10' N., long. 64°10' W. This port is no longer of any interest to shippers.

SHERBROOKE.

Sherbrooke, in lat. $45^{\circ}10'$ N., long. $61^{\circ}59'$ W., is situated on the E. bank of the St. Mary River, about 9 miles from its mouth.

Population.—About 1,000.

Exports.—Firewood and deals.

Accommodation.—Owing to a bar about a mile within the mouth of the river, the depth of water at spring tides is only 18 ft. deep; neaps, 14 ft. At low water there is only about 11 ft. The port is chiefly frequented by small vessels, but there is accommodation for vessels of from 300 to 400 tons, drawing 14 ft., for loading inside. In the summer months vessels can finish loading outside in good anchorage, or proceed to Liscomb or Sheet Harbours, and finish loading there. Shipbuilding is carried on here.

Port Charges.—**Harbour-master's Fees** :—See **Liscomb Harbour**.

SHIP HARBOUR.

Ship Harbour, in lat. $44^{\circ}48'$ N., long. $62^{\circ}55'$ W., is about 30 miles E. of Halifax.

Population.—About 750.

Imports.—Flour, beef, pork, and general merchandise.

Exports.—Lumber and fish.

Accommodation.—The channel alongside the mill wharf has been dredged to its former depth, and now has a width of 80 ft., and a depth at low water of 18 ft. A new wharf has been built on the E. side of the harbour, about 800 yards from the mill wharf, capable of accommodating a ship of 1,700 tons at high tide. The average rise and fall of the tide is about 8 ft. This harbour is free of ice from April to Christmas.

Pilotage.—Compulsory. Steamers and sailing vessels, $2\frac{1}{2}$ c. per reg. ton. **Towage** :—15 dols.

Port Charges.—**Entrance Fees** :—25 c. **Clearance Fees** :—25 c. **Mooring** :—Vessels over 700 tons reg., 5 dols. **Wharfage** :—Free. **Boat Hire** :—10 c. per hour. **Consular Fees** :—2 dols. 50 c. **Labour** :—From 1 dol. 50 c. to 2 dols. per day of 10 hours. **Bill of Health** :—1 dol. **Provisions** :—Fresh provisions may be obtained at a moderate cost; beef, 7 c. per lb.; potatoes, 30 c. per bushel.

Pro Forma Charges on a steamer of 1,723 tons register, with ballast in, and a cargo of lumber out, drawing 23 ft. loaded :—

	Dols.	c.
Entrance fees . . . . .	.00	25
Clearance fees . . . . .	.00	25
Pilotage	43	7
Towage	15	00
Mooring	5	00
Boat hire, 4 days	4	00
Consular fees	2	50
Bill of health	1	00
Labour, 6 men for 3 days	36	00
Provisions	10	00

117 07 = £24 1s. 9d.

*Canada.***SHIPPEGAN.**

Shippegan is in lat. 47°43' N., long. 64°44' W.

Population.—2,000.

Imports.—Provisions, salt, and dry goods.

Exports.—Codfish, canned lobsters, frozen smelts, etc.

Accommodation.—There is a depth at high water of from 20 to 45 ft., at low water 5 ft. less, and at lowest spring tides 7 ft. less. There are two wharves here. The length of quayage is 200 ft., about 100 ft. of which is private property. Depth at entrance and quayside at ordinary springs: high water, 26 ft.; low water, 20 ft.

Pilotage.—Compulsory. 1 dol. 20 c. per foot, inwards; 1 dol. per foot outwards.

Port Charges.—Entrance Fees:—50 c. **Clearance Fees:**—50 c.

Harbour-master's Fees:—1 dol. **Ballast:**—40 to 50 c. per ton. **Labour:**—1 dol. to 1 dol. 25 c. per day.

SOURIS.

Souris Harbour, in lat. 46°22' N., long. 62°16' W., is part of Colville Bay, on the E. side of Prince Edward Island.

Population.—1,400.

Accommodation.—The harbour is formed by a breakwater extending from the point, 1,300 ft. in a westerly direction, towards Souris Head. The lighthouse is on a high bluff at the eastern or shore end of the breakwater, from which at sea a fixed white light is seen. On the end of the breakwater a red light is placed on a pole, about 30 ft. from the water level, and as soon as vessels have passed in, coming from sea, they should haul up for the wharves or for shelter under lee of the breakwater, and also to avoid a flat rock which is about 1,300 ft. E.N.E. from the end of the breakwater. This rock has a black buoy placed on it. There is good anchorage in the bay in from 4 to 6 fathoms. The depth of water at the end of the breakwater is 26 ft. at high water, ordinary tides—reducing gradually to 19 ft. 6 in. at the end of the railway wharf, which is now (1908) being enlarged; dredging operations are also being carried on. Rise and fall of the tides, springs 5 to 6 ft., neaps 4 ft. The railway wharf is 671 ft. long and has 391 ft. of quayage.

Sailing vessels can leave this harbour with any moderate wind except south-west, which blows right in. The harbour is scarcely ever closed by ice until the middle of January, and is open in the spring about April 10.

The entrance of Colville, or the Souris River, on the west side of Colville Bay, under Souris Head, is very narrow, and at high water, with good tides, cannot depend on over 8 ft. to 8½ ft. on the bar.

Pilotage.—Not compulsory, about 2 dols. for sailing vessels, and 5 dols. for steamers.

Port Charges.—Labour:—1 dol. per day of 10 hours. **Sand Ballast:**—About 50 c. per ton. **Wharfage:**—Free at railway wharf when landing for, or receiving from, the railway; other wharves ⅓ c. per ton per day. **Harbour-master and Port-warden's Fees:**—See **Charlotte Town.**

Canada.

SUMMERSIDE.

Summerside, in lat. $46^{\circ}23'$ N., long. $63^{\circ}49'$ W., is situated on the N.E. side of Bedique Bay, near the confluence of the Dank and Wilmot Rivers.

Population.—2,900.

Accommodation.—There is good anchorage off the town in 3 to 4 fathoms at low water. The bar at the entrance of the harbour is about half a mile wide, with 19 ft. at low water. Rise and fall of springs, 6 ft. There is about 22 ft. of water at the end of the railway wharf at high springs, and 20 ft. at the end of the Queen's or public wharf on a bottom of mud. Vessels ground when alongside the wharves. Length of wharfage, 2,192 ft. The harbour is much exposed to strong W. or S.W. winds. The harbour closes about November 25 to December 1 each year.

Pilotage.—Compulsory. 80 c. per foot in and 60 c. per foot out. Ships bound in, wanting a pilot, can come to outside the light, in a very good anchorage.

Port Charges.—Harbour-master and Port-warden's Fees:—See **Charlotte Town.** **Wharfage:**—Free at the railway wharf, when landing or receiving cargo for the railway; other wharves $\frac{1}{2}$ cent. per ton per day. **Labour:**—1 dol. to 1 dol. 50 c. per day. **Sand Ballast:**—20 c. per ton.

SUMMERVILLE.

Summerville, in lat. $45^{\circ}8'$ N., long. $64^{\circ}11'$ W., is on the E. side of the Avon, about 2 miles above Horton Bluff.

Accommodation.—There is a good gravel beach, and a good wharf. Small repairs can be executed. There is good anchorage between the wharf and Horton Bluff.

A steam ferry boat runs every day to Windsor, calling at Hantsport and other places on the river.

Labour.—1 dol. 50 c. to 2 dols. per day.

STEVESTON.

Steveston is situated on Lulu Island, 12 miles below New Westminster on the Fraser River. This is a sub-port of New Westminster, and the principal salmon canneries are situated here. There is wharfage accommodation. Railway connection with Vancouver.

SYDNEY (Cape Breton Island).

Sydney, in lat. $46^{\circ}8'$ N., long. $60^{\circ}11'$ W., is a port of entry on the E. shore of the province. This port is entered through North Sydney, which see.

Population.—About 10,000.

Imports.—General merchandise.

Exports.—Coal, iron, pitch, and coal-tar creosote.

Accommodation.—Sydney harbour is a fine port, being equally easy of access and egress, and capable of containing a large number of vessels in safety. It is 3 miles wide at the outer entrance, but the navigable channel contracts rapidly to the breadth of half a mile between the two bars, which are of sand and shingle, and extend from the shore on either side at

Canada—Sydney (Cape Breton Island) (continued).

5 miles within the lighthouse on Flat Point. Inside these bars the harbour divides into the west and south arms, the former being open to E.N.E. winds, except at the coal loading ground, where vessels anchor under shelter of the N.W. bar, and at North Sydney, where they may lie in like manner under Allen Point. The south arm, being completely sheltered from the sea by the S.E. bar, affords safe anchorage in every part. The town of Sydney, $3\frac{1}{2}$ miles up this arm, is exceedingly well situated on the west side and summit of the peninsula, 55 ft. high. It has deep water close to its wharves, and the arm continues navigable for vessels to Sydney Bridge, a distance of 2 miles. The only drawback is the lateness of the spring, the advance of summer being retarded by the cold winds from the neighbouring sea, which is usually, until late in May, laden with drift ice, large masses of which are frequently driven into the harbour by the N.E. winds.

The Dominion Coal Co. has two piers, 1,260 ft. long with 28 ft. alongside at high and 24 ft. at low water. From one of these piers coal can be shipped at the rate of 7,200 tons per day of 24 hours, and from the other pier from chutes at the rate of 30,000 tons per 24 hours.

Pilotage.—Speaking compulsory. Vessels from 120 to 150 tons, 7 dols., and 1 dol. for every additional 50 tons.

Vessels of 800 tons and upwards, 1 dol. for every additional 100 tons or fractional part thereof.

Pilotage on vessels only going as far as North Sydney is 1 dol. less than above rates. Outward pilotage is the same as inward.

Port Charges.—**Harbour-master's Fee** :—According to size of vessel. Maximum 5 dols. **Sick Mariners' Fund** :—2 c. per ton. **Labour** :—Trimming bunkers, 15 c. Trimming cargo : coals, 5 c. for vessels of three hatches ; 6 c. for two hatches ; and 7 c. for one hatch. Discharging ballast, 15 c. per ton. **Coal** :—May be obtained direct from the mines, price 3 dols. 25 c. per ton. **Water** :— $\frac{1}{2}$ c. per gallon. **Commission** :—On vessels arriving in distress, $2\frac{1}{2}$ to 5 per cent. on disbursements.

Pro Forma Charges on a steamer of 1,581 tons net reg., coming from Shields in ballast, and loading 3,195 tons of coal tar pitch in bulk for Cette, France :—

	Dols.	c.
To Pilotage (inwards and outwards)	56	00
„ Sick Mariners' dues, 1,581 tons reg. at 2 c.	31	62
„ Harbour-masters fee	5	00
„ Bill of health (French Consul)	4	00
„ Port-warden (certificate)	8	00
„ Consul dues (Norwegian)	0	25
„ Entering and clearing at Customs and general attention to business	25	00
„ Cash to captain	789	30
„ Trimming 3,195 tons pitch at 10 c.	319	50
„ Address commission, 2 per cent.	206	16
„ Cables, telegrams, and postage	3	65
„ $1\frac{1}{2}$ per cent. advancing 1,448 dols. 48 c.	21	72
	1,470	20 = £302 10s. 4d.

THREE RIVERS.

Three Rivers (or Trois Rivières), in lat. $46^{\circ}22'$ N., long. $72^{\circ}34'$ W., is situated near Lake St. Peter, on the north shore of the River St. Lawrence, at the mouth of the River St. Maurice, about halfway between Quebec and Montreal.

Canada—Three Rivers (continued).

Population.—About 10,000.

Imports.—Coal, rails, pig-iron, sulphur, etc.

Exports.—Lumber, pulp, general merchandise, cattle, etc.

Accommodation.—The harbour is large and commodious, and the channel, which has a depth of 30 ft., is from 2,000 to 3,000 ft. wide. There is a depth of water at the wharves of from 14 to 36 ft.

Pilotage.—Rates according to the draught of the vessel, 1 dol. 50 c. per foot to and from Quebec.

Port Charges.—**Harbour Dues** :—On vessels, 3 c. per ton reg. On vessels using the harbour to take in or to discharge part of a cargo, 3 c. per ton on the cargo so taken in or discharged, provided the amount so paid does not exceed 3 c. per ton reg. of the vessel. **Wharfage Dues** :—10 c. per ton. **Mooring Dues** :—Vessels of 500 tons, 2 dols.; vessels of 1,000 tons, 3 dols. 70 c.; vessels of 1,500 tons, 5 dols. 35 c.; vessels of 2,000 tons, 7 dols.; 35 c. for every 100 tons over. No charges for landing ballast. **Discharging Cargo** :—20 c. to 25 c. per ton.

Pro Forma Charges on a vessel of 700 tons reg. :—

	Dols.
Towage up and down the river	250
Pilotage „ „	50
Harbour dues	21
Boat hire	10
Brokerage	5

Stowing cargo, 350 standard deals, viz.,

2 assistants, 12 days each at 1 dol. 50 c.	30
1 stevedore, 12 days at 2 dols. 50 c.	36

402 = £82 14s. 4d.

(N.B.—The ship's crew always put in the cargo at the port of Three Rivers.)

TIDNISH.

Tidnish is in lat. 45°59' N., long. 64°1' W.

Population.—200.

Imports.—General merchandise, coal, cement, etc.

Exports.—Lumber and fish.

Accommodation.—This is a loading place. There is a depth of 38 ft. at high water, and of 28 ft. at low water. Vessels anchor about a mile off the land, and can load down to any depth with safety. There is a Customs House here.

Pilotage.—Compulsory. 1 dol. per foot draught in and out.

Port Charges.—**Harbour Dues** :—50 c. per ton. **Labour** :—2 dols. per day.

UNION BAY.

Union Bay, or Comox, is in lat. 49°25' N., long. 125°0' W.

Population.—3,000.

Exports.—Wood, coal, fish, etc.

Accommodation.—There is a depth of 50 ft. alongside the wharf at high water, and of 35 ft. at low water. Good wharfage accommodation.

Canada—Union Bay (*continued*).

Pilotage.—Compulsory. 1 c. per ton net reg., and 1 dol. per ft. draught.

Port Charges.—Harbour Dues :—From 50 c. to 5 dols. **Trimming Coal :**—30 c. per hour.

VANCOUVER.

Vancouver, in lat. 49°13' N., long. 123°1' W., the Pacific terminus of the Canadian Pacific Railway, is situated within the entrance of Burrard Inlet, on the southern shore. It is 3,660 miles from Halifax—the Atlantic terminus of the C.P. Railway.

Population.—30,000.

Imports.—Salt, silk, tea, raw sugar, iron, tin, and general merchandise.

Exports.—Timber, fish, copper ore, gold, apples, flour, grain, agricultural machinery, paper pulp, etc.

Accommodation.—Vancouver possesses a perfectly sheltered harbour, accessible for vessels of any draught, and with adequate wharfage facilities. There is a depth of water on the bar of 42 ft., in port of 10 to 30 fathoms, and at the quays of 27 to 36 ft. There is about 3 miles of wharfage. There is an excellent beach on the north side of the harbour, where iron vessels can be safely beached for the purpose of being scraped and painted, the rise and fall of the tide (10 to 15 ft.) being sufficient to permit this being done in a satisfactory manner. For inwards business there are general cargoes from Europe, and cargoes of raw sugar from Java, for the refinery. For outwards business a charter for lumber can nearly always be obtained, and in the season (August to December) canned salmon for the United Kingdom. Provisions and supplies of all kinds are plentiful, and at moderate prices, imported stores being allowed to be supplied from bonded warehouses.

Time Signals.—A gun is fired daily from the E. side of Brockton Point at 9 h. p.m. Pacific standard time, equal to 17 h. 0 m. 0 s. Greenwich mean time.

Pilotage.—For vessels under sail, 2 dols. per foot draught and 1 c. per net reg. ton.

For vessels in tow of steamer, 1 dol. per foot draught and 1 c. per net reg. ton.

For steamers, 1 dol. per foot draught and 1 c. per net reg. ton.

The pilotage from Cape Flattery or Royal Roads to a line drawn from Point Atkinson to the red buoy on Spanish Bank, and vice versa, is not compulsory, but if the services of a pilot are required he must be paid the following rates :—

For vessels under sail—

	Dols. c.
From Cape Flattery	6 00 per foot.
„ Callum Bay	5 00 „
„ Beachy Head	4 00 „
„ Race Rocks or Royal Roads	3 00 „

For vessels under steam, or in tow of a steamer, the following rates are charged :—

Canada—Vancouver (*continued*).

	Dols. c.
From Cape Flattery	3 00 per foot.
Callum Bay	2 50 "
" Beachy Head	2 00 "
" Race Rocks or Royal Roads, vessels under steam	1 00 "
" Race Rocks or Royal Roads, vessels in tow of a steamer	1 50 "

Harbour pilotage, sailing vessels, 2 dols. per foot and 1 c. per reg. ton. Steamers, 1 dol. per foot and 1 c. per reg. ton. Any fraction of a foot not exceeding six inches is charged for as half a foot and any fraction of a foot exceeding six inches as a foot.

The limit of the port of Vancouver is inside a line drawn from Point Atkinson to the red buoys on Spanish Bank.

Port Charges.—Hospital Dues :—2 c. per reg. ton. **Health Inspector's Fee :—**4 dols. **Harbour Dues :—**5 dols. per vessel. **Bill of Health :—**Outwards, 1 dol. **Port Agency :—**25 dols. to 100 dols. **Discharge of Ballast** (usually done by ship's crew) :—25 c. per ton. **Harbour Towage :—**10 dols. to 20 dols. **Stevedoring :—**General cargo, or salmon, 45 c. per ton; sugar, 25 c. per ton; lumber and timber, per 1,000 ft., according to the style of cargo and facilities of the ship, 89 c. to 1 dol. **Watering :—**15 to 20 dols. **Port-warden's Fees :—**For survey of hatches, cargo, hull, spars, rigging of vessels, or damaged goods, 8 dols., including certificate, and 5 dols. for each shipwright or other skilled person employed. For valuation of vessel for average, and inspection of a vessel intending to load : For a vessel not exceeding 500 tons, 5 dols. ; 501 tons and not exceeding 700 tons, 7 dols. 50 c. ; 701 tons and over, 10 dols. For hearing and settling disputes, and for fees on appeal to the Council of the Board of Trade, providing the value of the thing or the amount in dispute does not exceed 500 dols., 10 dols. ; if exceeding 500 dols., 20 dols. For inspection and superintendence of vessels loading grain, provided that the total quantity of grain in any one vessel is not less than 100 tons, 5 dols. ; part cargoes of grain in sacks, not exceeding 100 tons in any one vessel, free. **Entering and Clearing Vessels**, and attending to Customs business, 25 dols.

Pro Forma Charges on a ship of 1,500 tons reg., inwards with ballast, and outwards with lumber :—

	Dols. c.
Customs fees	1 00
Harbour dues	5 00
Tonnage dues	30 00
Health-officer's inspection	4 00
Discharging part ballast, 300 tons	75 00
Docking ship from the ballast ground	20 00
Stowing and shipping cargo, 1,200,000 ft.	1,200 00
Surveyor's fee	25 00
Towage	650 00
Water	20 00
Stores,	500 00
Sundries,	100 00
Sailors' advances	300 00
Pilotage inwards, 14 ft., 2 dols.	28 00
" outwards, 21 ft., 2 dols.	42 00
Port agency	25 00
Telegrams, postage, etc.	25 00

3,050 00 = £627 11s. 5d.

Commission on charter and advances (if any) according to terms of charter-party.

Canada—Vancouver (*continued*).

Pro Forma Charges on a British vessel of 2,108 tons reg., loading 1,974,050 ft. of lumber :—

	Dols.	c.
Hospital dues, 2 c. per ton	42	16
Harbour dues	5	00
Customs fees, discharging and shipping crews, etc.	13	50
Survey	25	00
Pilotage inwards and outwards	103	00
Stevedore's bill	2,135	15
Towage	750	00
Shipping crew and advances	520	00
Watering ship	20	00
Butcher's account	137	15
Lumber and wood	79	78
Stores	50	00
Telegrams	8	54
Cash to captain	95	52
	3,984	80
Commission on charter	914	02
Extra insurance on deck-load	19	19
Commission and insurance on advances, £158	37	48

4,955 49 = £1,019 13s. 1d.

VICTORIA (British Columbia).

Victoria is in lat. 48°27' N., long. 123°25' W.

Population.—About 21,000.

Accommodation.—Victoria harbour is about 3 miles E. of Esquimalt. In the outer harbour there are two piers: No. 1 is 1,000 ft. long, and No. 2 is 700 ft. long. There is a uniform depth of water alongside these piers at low water of 30 ft. The anchorage is good. There are no cranes, and loading and discharging is done by donkey engines. Inside the inner harbour there are wharves alongside which vessels of 16 ft. draught can lie at low water spring tides. There are four patent slips capable of hauling vessels of 3,000, 1,000, 750, and 500 tons respectively. There are two iron foundries, with machine shops attached, where repairs to machinery can be effected; vessels to 1,500 tons are built. Regular steamer communication with Portland and San Francisco. Victoria possesses exceptional advantages as a port of call for vessels seeking orders. Direct telegraphic communication with all parts of the world.

Port Regulations.—For the purpose of allowing a clear space to practise the heavy guns established on Rodd Hill and in H.M. Dockyard at the entrance to Esquimalt Harbour, vessels arriving in the Royal Roads between May 15 and September 15 in each year must anchor to the westward of a line drawn from Duntze Head to Race Rocks lighthouse, and not less than one nautical mile distance from Duntze Head. Vessels anchored to the eastward of this limit will be given 24 hours' notice to move out of the danger zone, and any charges incurred in moving such vessel shall be borne by the vessel. Ballast must be discharged on the ballast grounds.

Pilotage.—The ports of the pilotage district of Victoria and Esquimalt are as follows :—

Port of Victoria.

Port of Esquimalt.

William's Head Quarantine Station.

The limits of the said ports are inside a line drawn from Clover Point to Brotchy Ledge (upon which a black beacon is placed), bearing about

Canada—Victoria (British Columbia) (continued).

W. by S. $\frac{1}{2}$ S., and a line drawn from Brocthy Ledge to Fisgard Lighthouse (outside Scroggs' Rocks and Brothers Island), bearing approximately W. by N.

The limits for speaking vessels bound into either harbour shall be at or outside a line drawn from William's Head to Trial Island, bearing N.E. and S.W. (All bearings are magnetic.)

Any vessel arriving at any port within this pilotage district, and not having been spoken in compliance with the Pilotage Act, it shall be optional with the master of such vessel as to the taking of a pilot outward.

Vessels calling at William's Head Quarantine Station, and immediately proceeding to the Port of Victoria or Esquimalt, shall be subject to the charges prescribed under clause (b) only.

Vessels bound to other ports and coming to anchor in Royal Roads, the pilotage shall be free, except the services of a pilot are employed, when pilotage according to the following graduated scale shall be payable:—

From inside, or north of Race Rock, to Royal Bay, or vice versa, 50 per cent. of the prescribed rates under clause (b).

From Beachy Head to Royal Roads, or vice versa, 1 dol. per foot.

From Pillar Point to Royal Roads, or vice versa, 3 dols. per foot.

From Cape Flattery to Royal Roads, or vice versa, 6 dols. per foot draught of water.

(b) For vessels entering into or clearing from the ports of Victoria and Esquimalt, the rates of pilotage shall be as follows:—

(1) For regular ocean steamers, 50 c. per foot draught of water and $\frac{1}{2}$ c. per net registered ton up to a maximum of 3,500 tons, on the inward voyage, subject to a discount of 20 per cent. and 50 per cent. of the above on the outward voyage.

(2) For irregular ocean steamers, 1 dol. per foot draught of water and $\frac{3}{4}$ c. per net reg. ton.

(3) For regular steamers in the coasting trade between San Francisco and Lynn Canal inclusive, the rates shall be the same as for regular ocean steamers as rated in Clause 1.

(4) For vessels under sail, 2 dols. per foot draught of water and 1 c. per net reg. ton.

(5) For sailing vessels in tow, 1 dol. 50 c. per foot draught of water and 1 cent. per net reg. ton.

(6) For all vessels entering into or clearing from William's Head Quarantine Station, the rates shall be 50 per cent. of the prescribed rates of any class of vessel for Victoria and Esquimalt, subject to exemption as above mentioned; provided, however, that all coasters between San Francisco and Lynn Canal inclusive, when compelled by special instructions from the Dominion Government to call at William's Head Quarantine Station, shall be exempt from pilotage dues, unless the services of a pilot are requested.

(7) For all vessels of 500 tons and under, 75 c. per foot draught of water.

GULF PILOTAGE.

For all vessels from the limits of the ports of Victoria and Esquimalt to the limits of all ports on Puget Sound and Gulf of Georgia, the rate of pilotage shall be 1 dol. per foot draught of water.

Canada—Victoria (British Columbia) (continued).

Steamers making regular trips to Victoria and Esquimalt and having paid the prescribed rates under clause (b) on the inward voyage and returning again to either of said harbours within a period of twenty days, shall only pay half the inward rates.

Port Charges.—Towage :—From the Royal Roads or Esquimalt to Victoria Harbour, 50 dols. to 75 dols. ; Victoria, Esquimalt Harbour, or the Royal Roads to sea, outside Cape Flattery, from 100 dols. to 150 dols. It is advisable to employ a steam-tug from Victoria, as it saves time and the cost of pilotage. **Hospital Dues :—**2 c. per ton reg. Sick mariners are provided with medical attendance, and board, free of charge, at the Government Marine Hospital, Victoria. **Fresh Water :—**About 60 c. per 1,000 gallons ; from the Corporation, 30 c. **Wharfage :—**Free while a vessel is loading or discharging. **Stevedore :—**Discharging :—

	per ton	c.
General cargo per ton weight and measurement		45
Railroad iron		55
Coal		35
Steel blooms, glass, sheet and bar iron		60
Nitrate and sulphur		40
Coke		65

Loading—

Lumber, cargo lots in sailing ships from 1 dol. 10 c. to 1 dol. 25 c., according to cargo and facilities of ship.

	per ton	c.
Salmon		45
Wheat		32½
Flour, 50 lb. sacks		32½
„ 200 lb. sacks		40
Oats		45
Hay		75
Ballast sand, 1 dol. 10 c. ; shingle or rock, 1 dol. 25 c. per ton.		

Ballast :—Shingle, from 1 dol. to 1 dol. 25 c. per ton. **Labour :—**40 c. per hour, daytime ; 50 c. per hour, overtime. **Commission :—**On disbursements, 5 per cent. Good provisions can be obtained in abundance, and at moderate charges.

Pro Forma Charges on a steamer of 3,068 tons net, drawing 16 ft. 6 in. in, and 14 ft. out, having discharged 1,000 tons general merchandise :—

	Dol.	c.
Pilotage	6	52
Customs for bill of health	1	00
Harbour dues	5	00
Sick Mariners' Fund	46	02
Stevedore discharging 1,000 tons at 45 c.	450	00

578 54 = £119 0s. 9d

WELCHPOOL.

Welchpool, in lat. 44°55' N., long. 66°58' W., is on Friar's Bay, on the west side of Campobello Island, almost directly opposite Eastport, in the State of Maine.

Accommodation.—There is a good anchorage in 8 to 10 fathoms close to the town, and there is 12 ft. close to Queen Wharf at low water. Spring tides rise 23½ ft. ; neaps, 20 ft. ; neaps range 16½ ft.

WELLINGTON (British Columbia).

Wellington is in lat. 49°13' N., long. 124°3' W. This port is now closed

WEST BAY.

West Bay, in lat. $45^{\circ}23'$ N., long. $64^{\circ}23'$ W., is formed by the headlands of Partridge Island on the E. and Cape Sharp on the W. It is about 1 mile W. of the mouth of the River Parrsborough.

Export.—Deals.

Accommodation.—It is a safe and commodious harbour, sheltered from all but S.E. winds. Vessels of any size lie afloat at all times; anchorage good. Cargo is loaded by means of lighters, there being no wharves. Charges are the same as at Parrsborough.

WESTPORT.

Westport is in lat. $44^{\circ}24'$ N., long. $66^{\circ}25'$ W., at the entrance to the Bay of Fundy.

Population.—770.

Imports.—Foodstuffs, clothing, etc.

Export.—Fish.

Accommodation.—There is a depth in the harbour of about 48 to 55 ft. at high water, and 30 to 35 ft. at low water. This port is mostly frequented by vessels employed in the fishing industry, but vessels entering and leaving the Bay of Fundy often come here to anchor, as the harbour is good and a comparatively safe one, except with N.E. gales, when it is a little rough, and on very rare occasions vessels have dragged their anchors.

There are two or three private wharves here.

Pilotage.—Not compulsory. Rates according to agreement.

Port Charges.—**Entrance Fees** :—Custom House, 25 c. **Clearance Fees** :—Custom House, 25 c. **Ballast** :—About 50 c. per ton. **Labour** :—From 1 dol. 75 c. to 2 dols. per day. **Brokerage** :—5 per cent.

WEYMOUTH.

Weymouth in lat. $44^{\circ}27'$ N., long. $66^{\circ}0'$ W., is situated on the north bank of the River Sissibou, which falls into St. Mary Bay.

Exports.—Deals and boards.

Accommodation.—Vessels of 15 ft. draught can cross the bar at ordinary spring tides, and lie aground alongside the wharves. Vessels of larger draught anchor outside, in 5 to 7 fathoms, about a mile from the town. The anchorage is perfectly safe at all times of the year to vessels provided with good chains and anchors.

Port Charges.—**Sick Mariners' Fund** :—2 c. per reg. ton. **Labour** :—5s. per day. **Loading** :—Deals, 1s. 8d. per standard. Provisions, wood, and water are plentiful and cheap. Fresh water can be had for the taking.

Pro Forma Charges on a vessel of 464 tons reg. :—

	Dols.	c.
Customs dues	9	78
Towage, in and out	42	50
Pilotage, in and out	15	00
Stevedore	139	23
Quay dues	18	00

224 51 = £46 3s. 11d.

WINDSOR.

Windsor, in lat. $44^{\circ}58'$ N., long. $64^{\circ}8'$ W., is on the S. side of the Avon River, at the confluence of that river with the St. Croix, 10 miles above Horton.

Imports.—Coal, bones, and general merchandise.

Exports.—Gypsum, lumber, and furniture.

Accommodation.—The depth at the entrance at ordinary high springs is 40 ft., and at low springs 30 ft. At the quayside there is 22 ft. at ordinary high springs and 12 ft. at low. There are 8 wharves, of which one belongs to the Government, the rest being private. The wharves are 150 ft. long each, and have from 20 to 30 ft. of water alongside. Windsor River dries at low water, but vessels can lie against the wharves on mud beds, both here and at Hantsport, above which place there is no anchorage.

Ballast is not allowed to be thrown out anywhere in the river and not nearer than 3 miles outside Horton Bluff light. Vessels go up the St. Croix River to Wentworth, two miles from Windsor, where large quantities of gypsum are exported annually. The depth of water at the wharves at Wentworth at spring tides is 24 ft. Railway connection with Halifax. Marine engines are made.

Pilotage.—Not compulsory. Tugboats usually take large vessels in and out of the port. Small vessels do not require towing.

Port Charges.—**Harbour-master's Dues:**—From 1 to 5 dols., according to the size of the vessel. **Stevedore:**—Loading—gypsum, $3\frac{1}{2}$ c. per ton; lumber, 2 dols. per day of 10 hours. **Towage:**—9 c. per ton in and out. **Water:**— $\frac{3}{4}$ c. per gal. There is no charge for wharfage for vessels either discharging or loading.

YARMOUTH.

Yarmouth, in lat. $43^{\circ}51'$ N., long. $66^{\circ}6'$ W., is situated on the S.W. coast of Nova Scotia, on the Bay of Fundy. The town is situated on the E. side of the harbour.

Population.—7,000.

Imports.—General merchandise, coal, and shipbuilding materials.

Exports.—Lumber, fish, fish oils, agricultural produce, cotton duck, and yarns.

Accommodation.—The channel leading up to the wharves is tortuous, but well marked by piles all the way up, and is about 350 ft. in width opposite the wharves, in the centre of the town. At high water the harbour varies from a half to one-and-a-half miles in width, but at low water the flats are bare, and only a narrow channel remains.

The depth at the entrance to the port is 27 ft. at high ordinary springs and 22 ft. at high ordinary neaps. The depth in the port is 27 ft. at high ordinary springs and 18 ft. at low ordinary springs. The length and depth of the wharves are as follows:—

Baker's Wharf is 379 feet long, 27 feet alongside at high springs, 14 feet at low springs.

Kellam's " " 250 " " 24 " " 10 " "

Dominion Atlantic Railway Co.'s Wharf has 23 feet alongside at high springs, 8 feet at low springs.

Other wharfage is 250 feet long, 25 feet alongside at high springs, $10\frac{1}{2}$ feet at low springs.

Canada—Yarmouth (*continued*).

At the anchorage ground there is 4 fathoms at low water, good anchorage on a bottom of gravel and mud. The inner harbour is safe and well protected. The outer harbour or "sound" is an open roadstead, and not safe in strong S.W. gales. Dredging operations have been carried on recently, so that the harbour has been considerably deepened and widened. Cape Forchu lies on the west side of Yarmouth Sound, on which is a light-house and fog-whistle. In the narrows, between the Sound and the inner anchorage ground, there is a beacon light and fog-bell. All the rocks are well buoyed, and under the supervision of the harbour master. The railway runs to the head of several of the wharves. There are tugs here; small repairs can be executed, and there is a patent slip that will take a steel vessel of 1,000 tons.

Pilotage.—As per agreement, about 2 dols. per 100 tons inwards, and the same outwards.

Port Charges.—Towage :—As per agreement; 20 dols. for vessels of 900 tons. **Lighterage :**—As per agreement. **Sick Mariners' Fund :**—2 c. per reg. ton. **Harbour-master's Fee :**—5 dols. **Patent Slip Rates :**—150 to 200 tons, 25 dols. for hauling up, and 24 hours after; 201 tons and upwards, 12½ c. per ton reg. Vessels remaining over 24 hours on the slip pay half rates for each additional day or part of a day. **Wharfage :**—150 to 200 tons, 1 dol. per day; 201 to 250, 1 dol. 20 c.; 251 to 300, 1 dol. 40 c.; 301 to 400, 1 dol. 65 c.; 401 to 500, 1 dol. 90 c.; 501 to 600, 2 dols. 5 c.; 601 to 700, 2 dols. 40 c.; 701 to 800, 2 dols. 65 c., increasing in proportion to the net tonnage. Vessels while loading and discharging are free of wharfage, but liable for the usual rate per day after completing these operations. Wharfage on ballast discharged from ships, 10 c. per ton. **Stevedore :**—Loading general cargo, 30 c. per ton measurement. Lumber and deals, 40 c. per 1,000 ft. Labour, 1 dol. 25 c. to 1 dol. 50 c. per day. Stone ballast, 30 c. per ton, put on board. Discharging ballast or coal, 20 c. per ton. **Coal :**—Of good quality, 5 dols. per ton. **Provisions** and stores are obtainable at moderate charges.

NEWFOUNDLAND.

Newfoundland, the oldest British colony, is a large island lying across the mouth of the Gulf of Saint Lawrence, being separated from the mainland of Labrador by the Strait of Belle Isle, 12 miles wide, and from Cape Breton by Cabot Strait 60 miles wide. It has a total area of 42,734 square miles and a population of 217,037. The coast line, 2,000 miles in length, is indented by deep bays. Hundreds of islands fringe the coast, two of them—Miquelon and St. Pierre—belonging to France; most of these islets form excellent harbours, being well sheltered and having good holding ground.

Commerce.—The commerce of Newfoundland is of an annual value of nearly £5,000,000 sterling, the returns for the year ended June 30, 1908, showing: Imports, £2,369,570; exports, £2,431,228. The principal articles exported are cod-oil, dried cod, herrings, lobsters, seal-oil and seal skins, and other products of the fisheries, together with iron and copper ore; the chief imports are coal, hardware, foodstuffs, and textile fabrics.

Internal Communications.—A railway crosses the island, connecting the capital, St. John's, with Harbour Grace on the west side of Conception Bay and Placentia on Placentia Bay, and opening up the most fertile and well-wooded districts. Communication between the island and the American continent is maintained by a fleet of first class steamers. There is a well-organized government post, telegraph and telephone service.

Currency, Weights and Measures.—The currency consists of dollars and cents, as follows: 100 c. = 1 dollar = 4s. 12 $\frac{2}{3}$ d. The British sovereign is equal to 4 dollars 86 $\frac{2}{3}$ c. The Colonial coins in circulation are: gold—2 dollar pieces; silver—50, 25, 20, 10, and 5 c. pieces; bronze—1 c., $\frac{1}{2}$ c. pieces. In addition British gold, silver, and copper coins circulate freely, as do also United States gold pieces. Silver coins are legal tender up to 10 dols. and bronze up to 25 c. Bank notes are issued by the banks carrying on business in the island. The weights and measures are the same as those in use in Canada.

Light Dues.—For any port or place in this colony: 24 c. per ton up to and including 500 tons; 12 c. per ton additional on every ton over 500 tons up to and including 1,000 tons; 6 c. per ton additional on every ton over 1,000 tons up to and including 2,000 tons.

No vessel shall pay more than 240 dols. in any one calendar year, or oftener than once in three months. Vessels arriving for repairs, coals, or supplies, pay one-half of above rates.

BETTS' COVE.

This place is not visited by vessels now, the mine having been closed for some years.

Newfoundland.

EXPLOITS BAY.

Exploits Bay, in lat. 49°10' N., long. 55°10' W., is situated on Notre Dame Bay, on the N.E. coast of Newfoundland.

Import.—Salt.

Export.—Deals.

Accommodation.—Exploits Bay is well sheltered, and has a good anchorage in 5 fathoms of water on a mud or sand bottom, and is easily accessible any time between May and November inclusive, or even December for steamers. Ships are not exposed to any dangerous wind, and the largest vessel can load at the Company's wharf always afloat.

Vessels should take out their own supplies necessary for the homeward voyage, but if short the Company will do all they can to supply them at lowest rates.

Money for disbursements is advanced, if required, at 2½ per cent. commission and cost of insurance. No address commission charges.

Pilotage.—Pilots are always available for a small fee.

Port Charges.—**Light Dues** :—24 c. per ton up to 500 tons ; 12 c. per ton from 501 to 1,000 tons ; 6 c. per ton over 1,000 tons. **Labour** :—Vessels can load with their own crews ; any further labour will be supplied by charterers at the ordinary rate of 1 dol. to 1 dol. 50 c. per day. No port dues, river, or anchorage charges.

GREENSPOND.

Greenspond, in lat. 49°6' N., long. 53°43' W., is situated on the S.E. side of a small island of the same name, about 28 miles N.W. of Cape Bonavista.

Imports.—Salt, provisions, and general merchandise.

Exports.—Salted fish, fish, and seal-oil.

Accommodation.—The harbour is small, but there is sufficient water for vessels drawing 16 ft., and 18 ft. in moderate weather, but with a heavy sea on it would be dangerous to attempt the harbour with far less draught. Vessels moor head and stern. With strong on-shore winds, which blow during autumn, the place is rather dangerous, and vessels should be well found in ground tackle. Sealing steamers lie up here during the winter, but Pools Harbour, which is about 3 miles from Greenspond, and easy of access, is preferable for large ships, owing to Greenspond being exposed to S.E. gales.

Pilotage.—There are no regular pilots, but the fishermen charge 2 to 4 dols. per vessel, in and out.

Port Charges.—**Light Dues** :—See **Newfoundland**. There are no other dues. **Labour** :—Discharging cargo, 3s. 6d. per man per day. **Ballast** :—Stone ballast, 3s. per ton f.o.b.

HARBOUR GRACE.

Harbour Grace is in lat. 47°42' N., long. 53°12' W.

Population.—5,184.

Imports.—Food stuffs, flour, molasses, sugar, salt, general hardware, and dry goods.

Newfoundland—Harbour Grace (continued).

Exports.—Cod fish, lobsters, salmon, seal and cod oil, seal skins, etc.

Accommodation.—The harbour is about 1 mile wide and 3 miles long. There is a depth of water of about 6 fathoms at high water, $5\frac{1}{2}$ fathoms at low water, and 5 fathoms at lowest springs. There is a small public wharf capable of accommodating vessels of from 50 to 100 tons, and some private wharves with a depth of about 20 ft. of water at their head. There is also a patent slip that will take vessels of 200 tons.

Pilotage.—Not compulsory. Rates according to agreement.

Port Charges.—**Entrance Fees:**—25 c. **Clearance Fees:**—25 c. **Light Dues:**—See Newfoundland. **Ballast:**—40 c. per ton. **Labour:**—12 c. per hour. **Water Dues:**—5 c. per ton up to 200 tons (maximum 20 dols.), payable once a year.

ST. JOHN'S.

St. John's is in lat. $47^{\circ}32'$ N., long. $52^{\circ}46'$ W.

Population.—29,594.

Accommodation.—The harbour is easy of access in any wind or weather, providing there is no fog, and once inside it is perfectly safe, being quite land-locked. Red leading lights in line N.W. $\frac{3}{4}$ W. clear all dangers. The anchorage is close to the wharves, in about 4 fathoms of water. The width of the entrance by Chain Rock is 300 ft., and the depth 48 ft. at ordinary high springs, and 24 ft. at low springs. The entrance by Ruby Rock at ordinary springs is 24 ft. at high and 18 ft. at low. There is about 150 ft. of quayage with 54 ft. alongside at high ordinary springs; there is another quay under construction. There are sheer legs to lift 50 tons, and cranes at St. John's Dry Dock Wharf.

There is a dry dock 630 ft. long, over all, $85\frac{3}{4}$ ft. wide at the entrance, at the ordinary high spring level, and 25 ft. on the sill at ordinary high springs. There is also a floating dock capable of taking vessels up to 200 tons. Heavy repairs can be effected to hulls, engines, and boilers.

Time Signals.—A gun is fired at noon St. John's (Chain Rock Battery) mean time, equal to 3 h. 30 m. 43.1 s. Greenwich mean time, and 0h. 0m. 1.3 s. local mean time. The signal is reported as useless.

Pilotage.—In and out :—

		Dols. c.				Dols.	
Vessels under	80 tons . . .	5	35	Vessels from	351 to 400 tons . . .	16	00
Vessels from	80 to 100 tons . . .	6	70	"	401 " 500 " . . .	18	70
"	101 " 120 " . . .	7	35	"	501 " 600 " . . .	21	35
"	121 " 160 " . . .	8	00	"	601 " 700 " . . .	24	00
"	161 " 200 " . . .	8	70	"	701 " 800 " . . .	26	70
"	201 " 240 " . . .	9	35	Over that size for every 100 tons			
"	241 " 280 " . . .	10	00	additional	1	35	
"	281 " 300 " . . .	10	70				
"	301 " 350 " . . .	13	35				

Maximum for steamers, 48 dols.; sailing vessels, 32 dols. Coasting vessels which take pilots pay one-half of the above rates. Pilotage is payable on the register tonnage of all vessels, as ascertained before going out of the harbour.

Port Charges.—Foreign-going vessels. **Light Dues:**—See Newfoundland. **Water Dues:**—5 c. per reg. ton, not to exceed 20 dols. Payable once a year. **Harbour-master's Dues:**—

Newfoundland—St. John's (continued).

Vessels	60 to 100 tons register	Dols.
"	101 " 200 "	2
"	201 " 300 "	3
"	301 " 400 "	4
"	401 " 500 "	5
"	401 " 500 "	6

Payable once between January 1 and June 30, and once between July 1 and December 31.

TOWAGE RATES.

Rate of towage by tugboats from one mile outside the Heads to Consignee Wharf, or vice versa :—

Vessels under 60 tons	Dols. c.	Vessels from 301 to 350 tons	Dols. c.
Vessels from 60 to 100 tons	4 00	351 " 400 "	24 00
" 101 " 125 "	4 80	" 401 " 450 "	26 00
" 126 " 150 "	10 00	" 451 " 500 "	28 00
" 151 " 175 "	12 00	" 501 " 550 "	30 00
" 176 " 200 "	14 00	" 551 " 600 "	32 00
" 201 " 225 "	16 00	" 601 " 700 "	34 00
" 226 " 250 "	18 00	" 701 " 800 "	38 00
" 251 " 300 "	20 00	" 801 " 900 "	42 00
	22 00		46 00

Vessels from 901 to 1,000 tons, 50 dols.

Towage beyond one mile limit to Cape Spear, one-third additional. 10 per cent. charged for the use of the steamer's hawser. One-third additional charged from December 10 to April 10. Vessels in distress or disabled must make special arrangements. Vessels employing a tug inwards will be charged two-thirds of the rate going out. Owners are not responsible for any damage done by the vessel towed, to themselves or others.

Labour :—18 c. per hour, day ; 25 c. per hour, night ; after midnight, 40 c. per hour. **Ballast** :—Rubbish, 20 c. per ton ; stone, 50 c. per ton.

Coal :—Cape Breton, 5 dols. 50 c. per ton ; Welsh steam, 6 dols. 50 c. per ton.

Discharging :—30 c. per ton.

Graving Dock Charges :—First day, 25 c. per gross ton ; lay days, 12½ c. per gross ton.

Pro Forma Charges on a steamer of 1,755 tons :—

	Dols. c.
Entering at Customs	4 20
Telegraphing to W. Hartlepool	1 25
Light dues, 226 dols. 50 c.; water rate, 20 dols.; harbour master's dues, 6 dols.	252 50
Pilotage and boat's assistance	48 00
Town Council, tax on gross tonnage, 1,755 tons at 1 c. per ton	17 55
Telegraphing to St. John, N.B.	1 00
Clearing at Customs	4 20
Telegraphing to St. John, 1 dol.; telegraphing to W. Hartlepool, 2 dols. 50 c.	3 50
Paid captain for freight	2,304 94

2,637 14 = £542 12s. 5d.

Pro Forma Charges on a schooner :—

	Dols. c.
Entering at Customs	2 10
Light dues, 142 tons, at 24 c. per ton	34 08
Water rates, 142 tons, at 5 c. per ton	7 10
Harbour master's dues	3 00
Lloyd's surveyor's fees, 163 tons gross, at 5 c.	8 15
Towage for sea	12 00
Harbour tow	2 00
Pilotage, in and out	8 00
Clearing at Customs	2 10
Paid captain	214 93

293 46 = £60 7s. 8d.

Freight on 258 tons coal, at 7s. sterling per ton, £90 6s. sterling, less advance, £30 = £60 6s.

Newfoundland.

TILT COVE.

Tilt Cove is in lat. $49^{\circ}54'$ N., long. $55^{\circ}46'$ W.

Accommodation.—It is quite an open anchorage, exposed from E. to S., but may be considered safe. There is 9 fathoms of water close to the shore. There is a wharf alongside which a vessel drawing 19 ft. can take in cargo. Ships lie head in, and hawser from the stern to the eastern point. Every assistance is rendered, and a good look-out kept for vessels expected to arrive.

Cape St. John, about 7 miles E. of Tilt Cove, is high and rugged, and can be easily recognized by a small round island called Gulf Island, lying about 5 miles E. of the Cape. About 2 miles S. of this point are the Bishop Rocks, always visible above water. From Cape St. John the coast is free from hidden dangers, and may be approached within half a cable length. Vessels approaching Tilt Cove by night should send up rockets, or burn blue lights, which will be answered on shore, and a boat will come off; a flag should be hoisted by day. When there is more than one vessel in the Cove the pilot takes fresh arrivals to the north-west arm, 18 miles to the west, to wait their turn. The ore is brought down from the mine in wagons, carrying about 4 tons each. By means of a tramway they are run on a drop placed over the hatchway, and emptied into the vessel's hold. 1,000 tons can be loaded in 24 working hours.

Vessels waiting their turn in summer months anchor in 25 fathoms, outside the cove, about 2 cable lengths from the entrance. Ballast is discharged at this anchorage.

Vessels can safely load at this port from May to November inclusive.

Nearly all the steamers that come here are on time charter, the company paying all expenses.

Pilotage.—For a vessel of 1,443 net reg. tons, in and out, 15 dols. Pilots can be obtained.

Port Charges.—Light Dues :—See **Newfoundland. Port Dues :**—Including pilotage, discharging, ballast, loading, and trimming cargo, 6*d.* per ton register. Fresh water free.

TWILLINGATE.

Twillingate, in lat. $49^{\circ}35'$ N., long. $54^{\circ}47'$ W., is a fishing town on the Bay of Notre Dame, about 32 miles S.S.E. of Cape St. John.

Population.—3,542.

Imports.—Provisions, dry goods, and general merchandise.

Exports.—Cod-fish, cod-oil, seal-oil and skins, salmon, etc.

Accommodation.—There is a depth of water of from 5 to 11 fathoms in the harbour, which is quite safe, except with winds from the N.E. and N.N.E., and vessels coming here in the fall of the year should be well found in ground tackle. The best anchorage is on the N. side, opposite the mercantile premises; there is also a sheltered anchorage under the Government wharf. There is a lighthouse on Long Point at the main entrance of the harbour.

Newfoundland—Twillingate (*continued*).

Pilotage.—Not compulsory. Rates according to agreement, usually 4 to 5 dols. on vessels boarded in the offing.

Port Charges.—Light Dues :—Foreign vessels, 24 c. per reg. ton up to 500 reg. tons ; from 501 to 1,000, 12 c. per reg. ton additional ; from 1,001 to 2,000 tons, 6 c. per reg. ton additional. **Entrance Fees :—**1 dol.

Clearance Fees :—1 dol. **Ballast :—**2s. 6d. per ton, delivered on board.

Labour :—4s. to 5s. per day, according to season and work. **Bill of Health :—**10s.

Commerce.—The trade of the Republic is of an annual value of nearly 50 million pounds sterling, the imports during the fiscal year ended June 30, 1907, being valued at £23,822,511, and the exports at £24,801,801. The Customs authorities are very strict in the interpretation of their regulations. During the financial year 1906-7 the customs duties amounted to 54,060,145 dollars=£5,518,639. The chief imports are cotton and linen goods, iron, machinery, woollens, coal, and chemicals from Great Britain, and locomotives, electrical machinery, iron and steel work, copper, wheat, coal, carriages, and wood, and the manufactures thereof from the United States. During 1906-7 the tonnage entered and cleared at the Mexican ports totalled 6,540,057 tons.

Commerce.—The trade of the Republic is of an annual value of nearly 50 million pounds sterling, the imports during the fiscal year ended June 30, 1907, being valued at £23,822,511, and the exports at £24,801,801. The Customs authorities are very strict in the interpretation of their regulations. During the financial year 1906-7 the customs duties amounted to 54,060,145 dollars=£5,518,639. The chief imports are cotton and linen goods, iron, machinery, woollens, coal, and chemicals from Great Britain, and locomotives, electrical machinery, iron and steel work, copper, wheat, coal, carriages, and wood, and the manufactures thereof from the United States. During 1906-7 the tonnage entered and cleared at the Mexican ports totalled 6,540,057 tons.

Currency, Weights and Measures.—The monetary unit is the silver peso or dollar = 24½*d.* British currency, or 50 cents. United States currency. The peso is divided into 100 centavos. The coins in circulation are 10 and 5 peso gold coins, 1 dollar, 50, 20, and 10 centavo silver pieces, 2 and 1 centavo bronze coins and 5 centavo nickel pieces. The notes issued by the Banco Nacional, the Bank of London and Mexico, and the various state banks are everywhere current at their full face value, and in consequence little gold is ever seen in circulation. So far as weights and measures are concerned the metric is the legal system adopted by the Mexican Government, but the old time weights and measures are still much used in certain parts of the country, and it is, therefore, as well to state their names and equivalents :—

[illegible]

Customs Regulations.—All who are in any way connected with

Mexico.

Mexican trade must never forget that the surveillance of the goods commences at the moment of shipping. The shipper has to fill up a form (Consular invoice) containing 13 separate columns of details of goods, and get it certified by the Mexican Consul at the port of shipment; and if the goods do not arrive at the Mexican port, or, arriving, do not correspond with the Consular invoice, the importer is liable to heavy fines. The authors of the original customs law fixed their fines which were to be inflicted for various "offences" on a very liberal basis, and as these fines are divided among the customs officials, they are naturally zealous in discovering "offences," and sharp in inflicting fines. Shippers would therefore do well to remember that among the more important offences are :—

Describing in ship's manifest, as one package, several joined together :—Fine, 25 dols. per packet so joined.

Interlineations, erasures, or corrections in manifest, made without being certified by Mexican Consul at port of loading (unless alterations do not affect duties) :—Fine, 100 dols. per alteration.

Non-presentation on arrival of manifest (duly certified by Mexican Consul), list of samples, list of passengers and their baggage, list of ship's stores (which must only be sufficient for return voyage) :—Fine, 100 dols. for each document not in order.

Absolute default of manifest, duly certified :—Fine, 500 dols.

Manifest in language unknown at port of discharge is treated as null :—Fine, 500 dols.

Non-declaration of explosives :—Fine, 500 dols.

Declaration must be in the Spanish of the tariff, or fines or extra duties may be levied; so that it is unwise to use translations of the tariff in preparing manifests—the original should always be consulted.

"Slops" in excess of the requirements of the return voyage leads to fines and other difficulties.

Duties of Shipmasters.—To avoid the infliction of these fines shipmasters should bear in mind that (a) their manifest must be in full detail, and be certified by the Mexican Consul at the port of departure; (b) they must bring a detailed list of parcels and samples on board; (c) they must deliver on arrival a list of all passengers' baggage on board; (d) also a list of the ship's stores. When ships clear at a port where there is no Mexican Consul, the shipmaster draws up his manifest in triplicate only, and sends, in registered letters, one copy to the Ministry of Finance and another to the Director of Customs of the port to which he is bound. To secure the honesty of Customs officials, the original authors of the law adopt two methods :—(a) a system of checking Custom House proceedings by means of duplicates of all Customs documents, which duplicates have to be sent to, and retained by, the Finance Minister, who thus knows from day to day all that happens in every Custom House in the Republic; (b) a system of fines for non-compliance with the intricate regulations established by law. The system of checking previously alluded to involves an enormous amount of labour on the part of shippers and importers, *e.g.*, ship's manifests and consular invoices must be made out in quadruplicate, one part for the Consul who certifies them, the second part for the Minister of Finance, the third for the Director of the Custom House of the port to which the ships or the goods are consigned, and the fourth part for the consignee. And if any error should be discovered in the manifest or consular invoice, such error must

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be explained in a document also in quadruplicate. In fact, the amount of clerical work involved in carrying out this system is immense, and it often happens that to clear a small package the consignee has to sign as many as eight or twelve documents. Art. 27 (new law) simplifies the *modus operandi* when ships clear, at a port where there is no Mexican Consul. The ship-master draws up his manifest in triplicate only, and sends, in registered letters, one copy to the Minister of Finance and another to the Director of Customs of the port to which he is bound. The old law required the ship-master to get the manifest certified by some authority at the port of clearing, a regulation which always caused delay and often difficulty.

Port Dues.—The payment of the following taxes by vessels trading to Mexican ports was remitted by a decree published in the Mexican *Diario Oficial* in 1898 :—

1. The lighthouse due.
2. The port captaincy due.
3. The port dues as created by sections (b) and (c) Article 4 of the decree of May 28, 1881.

Tonnage Dues.—By the same decree it was provided that these shall be collected on every merchant vessel, Mexican or foreign, laden or in ballast, arriving at any port of the republic. This due to be paid on the basis of the gross tonnage of vessels, and collected only when they arrive direct from some foreign port or locality.

1. For sailing vessels, 10 c. per ton.
2. For steamships, 6 c. per ton.

Steamers belonging to international lines making regular trips to Mexican ports, under a fixed itinerary and with given days of departure, may enjoy in said ports, included in their itinerary, a reduction of the tonnage dues, in the following cases and conditions :—

1. On the Pacific coast the reduction may be as high as 75 per cent. for ships carrying the mails in the Mexican postal service, without receiving pecuniary remuneration from the Government of Mexico for said service, or enjoying exemption from other dues ; and as high as 25 per cent. for vessels not engaged in the postal service, or performing it in return for pecuniary compensation from the Government, or exemption from some other tax or taxes.

2. On the Atlantic coast the reduction may be as high as 50 per cent., and is only enjoyed by vessels engaged in the Mail service without compensation from the Mexican Government on that account or any other ; that are not in receipt of a subsidy, and that do not enjoy exemption from any other tax or taxes.

In order to obtain the benefit of the reductions mentioned in the foregoing sections, the Company desiring them must make a petition for them to the Department of Communications and Public Works, and the Department determines the amount of the reduction to be granted, which is to be embodied in the Company's charter or concession, the reduction being proportional, not only to the services rendered by the line to commercial interests, but to the other obligations assumed by the company, both with regard to the Government and the public in general. The Company must also, in order to obtain the reduction, present its itinerary in due time to the Department, which gives to it its approval if it is in accordance with the requirements of the charter or concession.

Mexico.

All the steamers of a line entitled to the reductions mentioned in the foregoing article touching at a Mexican Atlantic port not included in the line's itinerary pay the full tonnage dues if the said port is the first in Mexico at which the vessel touches in its trip ; and if the vessel, after having enjoyed the benefit of the reduction from having called first at a Mexican port included in its itinerary, should afterwards call at some other port not included in said itinerary, it pays the latter as tonnage dues the difference between the full dues and the sum it paid at the first port at which it touched. The provisions of this article are to be complied with, even though the vessel may make its extra call with the special authorization of the Government. Vessels in distress do not pay tonnage dues. The gross tonnage of a vessel calculated at 2·83 cubic metres (or 100 cubic ft.) per ton, and serving as the basis for the collection of port dues, are to be set forth in the general manifest of the vessel, or, in the absence of manifest, must be declared by the captain when the official visit is made to the ship on its entering the port. The accuracy of the information must be proved by the presentation to the Custom House employés of the original registry of the ship, or some document equally authentic, showing its capacity.

The Custom House authorities, however, are entitled to have the dimensions of a vessel taken when the statement as to its capacity does not satisfy them, and the process of measurement will in such cases be subject to the rules laid down by the regulations in force. When a vessel comes from abroad destined for two or more Mexican ports, the Custom House which collects the tonnage dues will, in addition to an ordinary receipt, provide the captain with a certificate of payment, to serve as a protection to him in the other Custom Houses. If this document is not presented the tax must be paid over again, and only on it being proved to the Department of Finance that payment has been made twice will the Department authorise the return of the amount paid in excess.

In ports where either there have been or are, in course of execution, harbour improvements giving shelter to, or facilitating the entrance or the loading or unloading of ships, in addition to the tonnage due payable under the provisions previously mentioned, every merchant vessel, whether Mexican or foreign, whether engaged in the trade of the high seas or the coast, as well as their cargo, is subject to the following taxes :—

1. *An additional tonnage due*, payable by ships arriving at the improved ports, regardless of whence they come or whether they are native or foreign. This due to be collected on the same basis as the tonnage due before mentioned in Article 3, regardless of whether the ship is subject to said due wholly or in part, or whether it is not subject to it at all. The additional tonnage due is determined by the Executive in the case of each improved port, but this amount will never be in excess of 50 per cent. of the rates for the regular tonnage due ; in no case, however, will this additional due be subject to any reduction that may be allowed in the regular charge levied.

Under the provisions of this regulation, the ports of Vera Cruz, Progreso, Frontera, and Laguna (island of Carmen) have been declared improved ports, the dues being 5 c. per ton for sailing vessels, and 3 c. per ton for steamers, even when a vessel may have called at another Mexican port.

2. *A due for loading and unloading*, payable by the consignee on imports, and by the shipper on exports, but not by the vessel, is paid on all merchandise, whether in the import, export, or coastwise trade, taken on

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board or discharged at an improved port, whatever may be the place or form in which either of those operations is performed, and although the wharf or place where they are effected does not belong to the Federal Government. This tax is also to be paid without any reduction and in the following proportions :—

(a) Products and manufactures for exportation, national or nationalized goods, carried in the coastwise trade, whether clearing or entering, mineral coal, construction woods, and other materials and articles which the Executive, by means of regulations or enactments, may place under this head, are subject to this due at the rate of 50 c. for each ton of 1,000 kilos., gross weight.

(b) All other goods, not included in foregoing section, are subject to this due, at the rate of 1 dol. for each ton of 1,000 kilos., gross weight.

(c) Merchandise transhipped from one vessel to another in port, and which is destined for some other port, as also merchandise that is wholly laden or unladen by means of lighters, is subject to half of the duties mentioned in sections (a) and (b).

Ships and merchandise are not subject to the dues above mentioned in the following cases :—

1. The additional tonnage due is not paid by—

(a) Vessels in distress.

(b) Fishing vessels.

2. The due for loading and unloading is not paid on the following :—

(a) Passengers' baggage.

(b) Samples not subject to import duties.

(c) Postal packages.

(d) Packages unloaded by mistake, and which are taken on board again to be carried to their destination.

(e) Fishing products unloaded by vessels engaged in that industry.

(f) Provisions, water, supplies, and fuel taken on board for their own use by ships in port.

(g) Articles imported for the Federal or State Governments, and which are exempt from duty under Article 2 of the decree of June 6, 1898.

(h) In the coastwise trade, articles intended for the use of the Federal Government.

The Executive determine in what ports and at what date additional tonnage dues are to be collected, taking into account the contracts which may have been made or which may be made in the future for the execution of the works, and the benefits that, in virtue of the advance of the said works, shall accrue to commerce and navigation.

For each port in which improvements are made the Executive fix the tariffs for dues for wharfage, anchorage at buoys, or other places for the loading and discharging of cargo in the ports, for watering, for deposits of coal, for the carrying of cargo over the wharves in vehicles, for storage in the warehouses, and for all the other services in the said ports.

In accordance with this regulation, the tariff for anchorage at buoys has been fixed at 8 dols. per day. So far as the wharfage due is concerned this varies, but in the majority of cases no wharfage charge is collected.

Foreign vessels which may carry merchandise to one port for transhipment to another port in the Republic, by taking out a separate manifest for that part of the cargo destined for the final port of delivery, enable the

Mexico.

goods to be sent through for clearance at destination, without having to be passed through the Custom House at the first port at which the merchandise may have been unloaded, but this privilege can only be secured by the use of a separate manifest for each port for which there may be transfer cargo.

Pilotage.—The pilotage dues have been fixed at 1.75 dol. per ft. plus 15 dol. for mooring boat. These dues are collected both inward and outward, and double amounts are charged after sundown.

Sanitary Dues.—In the collection of the sanitary dues, the registered tonnage is estimated for the purpose of assessing the tax, by deducting 35 per cent. of the gross tonnage for steamers and 5 per cent. for sailing vessels.

IMPORTANT TO MASTERS OF VESSELS.

The following advice to masters of vessels clearing in foreign ports in ballast for ports in the Republic of Mexico was given some years ago by the late Mr. F. M. Petersen, Consul-General of Sweden and Norway at Vera Cruz, and is as good at the present time as on the day upon which it was written:—

“It often happens,” wrote the Consul-General, “that vessels arriving in ballast at Mexican ports are fined, sometimes heavily, on account of defective manifests, and principally for their not being properly certified, and copies remitted through the proper channels; I have, therefore, thought it might in some degree lessen these evils if some few hints were given to the masters as to the safest way of avoiding these fines.

Art. 23 of the Custom House regulations of this Republic states:—“The ship’s manifests must contain the name of the port of destination, the name of the captain, rig of the vessel, whether barque, brig, schooner, etc., her name, nationality, and register tonnage, the latter in figures and in letters (as, for instance, 242 $\frac{9}{100}$ tons, two hundred and forty-two and nine one-hundredths register tons), and the name of the consignee, or, if his name is not known, the captain can consign to himself or to order, stating same on manifest, and the name of the true consignee may be declared at this Custom House within twenty-four hours after ship’s arrival.”

In the body of the manifest must be stated in figures *and in writing* the number of tons of ballast, the sort of ballast, with the value in figures and in writing; in fact, it may be taken as a general rule that all amounts and quantities must be stated in figures and also in writing; the non-observance of this rule will subject the vessel to a fine of at least \$10 (ten dollars) for each fault. The same article also orders that the name of the port from which the vessel is being dispatched must be stated, as also the date, and the captain must declare at foot that “he has no other merchandise on board but those as above stated,” and that “ship sails for the United States of Mexico with the object of legal traffic.” Captains must understand that the manifests must be clear of all alterations, interlineations, or corrected errors, as any appearance of these will be punished by a fine of from 10 to 50 dols.

Art. 26 of Custom House regulations orders:—“That captains shall present for certification to the Consul, Consular or Commercial Agent of Mexico, who may reside in the port from whence vessel is to be dispatched, *four* copies of the general manifests of merchandise (or ballast) which he has on board for a Mexican port, three of which copies are to remain in the Mexican

Mexico.**ALVARADO.**

Alvarado is in lat. $18^{\circ}52'$ N., long. $95^{\circ}50'$ W., about 50 miles S.E. of Vera Cruz, and $1\frac{1}{2}$ miles distant from the mouth of the River Papoalapan.

Population.—About 5,000.

Exports.—Cedar, mahogany, fustic, and cattle.

Accommodation.—Large vessels anchor in the roadstead, but are exposed to northerly winds, and have to load by means of lighters. A pilot comes off on displaying the usual signals.

Pro Forma Charges on a vessel of 200 tons reg. from Vera Cruz, drawing 10 ft. calling at Alvarado in ballast, and proceeding to Tlacotalpam to load, the light dues having been paid at Vera Cruz :—

	Dol.	c.
Pilotage from Vera Cruz to Alvarado	25	00
" at Alvarado bar	26	00
" to Tlacotalpam	8	00
Anchorage at Tlacotalpam	3	75
Stevedore's bill	150	00
Butcher's bill	15	80
Pilot from Tlacotalpam	12	00
Anchorage at Alvarado	1	25
Stamps for Custom House despatch	8	50
Butcher's bill at Alvarado	10	20
Pilotage out, and captain of port's fee	39	50
Petty expenses	5	00
Assistance boat over the bar	20	00

325 00 = £33 $\frac{1}{2}$ s. 7d.

CAMPECHE.

Campeche is in lat. $19^{\circ}48'$ N., long. $90^{\circ}33'$ W. Shortest sea route from Liverpool, 4,540 miles.

Population.—17,465.

Imports.—All kinds of merchandise, provisions, etc.

Exports.—Wood, salt, sugar, skins, wax, hemp, chicle, logwood, etc.

Accommodation.—Vessels drawing 10 ft. can approach to within a mile of the coast to the leeward of Campeche; if to the windward, not nearer than 3 or 4 miles; those drawing more than 15 ft. anchor 6 to 7 miles off. The anchorage is perfectly safe. There is a pier about 50 yards long, but it can only be approached by boats.

Pilotage.—In and out, 1 dol. 75 c. per ft. Compulsory.

Port Charges.—Tonnage Dues :—9 c. per ton. **Sanitary Dues :—**Vessels coming in, 2 c. per ton at first port; 1 c. per ton at each further port (minimum 10 dols. and 5 dols. respectively). (For the payment of these dues tonnage is computed by deducting 35 per cent. from gross tonnage for steamers, and 5 per cent. for sailers.) Steamers going out, bound for foreign ports, 5 dols.; sailers, 3 dols. Coastwise steamers, 3 dols.; sailers, 2 dols. **Boat Hire :—**3 dols. per day; 6 dols. per night, per trip. **Ballast :—**About 3 dols. per ton. **Labour :—**2 dols. 50 c. per day; 50 c. per hour extra at night. **Brokerage :—**50 dols. gold, in and out. **Stamps :—**For papers, 8 to 10 dols. **Mexican Bill of Health :—**5 dols. 50 c. **American Bill of Health :—**11 dols. 25 c. **Clerk on Board :—**About 8 dols. per day. **Stevedore :—**Loading or discharging, 1 dol. 50 c. per day.

Mexico.

CHAMELA, OR PERULA BAY.

Chamela, in lat. $19^{\circ}30'$ N., long. $105^{\circ}7'$ W., is situated on Perula Bay.

Export.—Dye-woods.

Accommodation.—The bay is spacious and convenient, and has excellent anchorage, in 5 fathoms, about half a mile off shore. This anchorage may be considered perfectly safe from November to June. During the other months of the year a heavy swell frequently sets in from the S. A pilot is not required.

Port Charges.—**Tonnage Dues** :—1 dol. per ton. **Labour** :—1 dol. per day. **Water and Provisions** :—Excellent fresh water can be had at 3 c. per gallon, and fresh beef at 6 c. per lb.

This port is open to coast trade only. Foreign vessels must go to Manzanillo for clearance.

CHILTEPEC.

Chiltepec, in lat. $18^{\circ}38'$ N., long. $93^{\circ}10'$ W., is about 30 miles from Frontera bar.

Export.—Mahogany.

Accommodation.—There is a depth of water on the bar of 9 to 12 ft. in summer, and 7 ft. in winter. The bar is formed by an arm of the Gonzales River.

Pilotage.—1 dol. 50 c. per ft.

Loading cargo inside the bar costs 1 dol. 20 c. per ton ; outside, 2 dol. 50 c. per ton, including stowage and towing.

FRONTERA.

Frontera, in lat. $18^{\circ}33'$ N., long. $92^{\circ}42'$ W., the port of entry for the State of Tabasco is situated $3\frac{1}{2}$ miles above the mouth of the Grijalva River which is navigable for vessels of 8 ft. draught to San Juan de Bautista, a distance of about 72 miles from its mouth.

Population.—7,000.

Exports.—Mahogany, dye and cedar wood, chicle, cocoa, sugar, coffee, tobacco, indigo, tropical fruits, etc.

Accommodation.—On the East point at the mouth of the river there is a lighthouse. The bar at the entrance to the harbour extends beyond the two extreme points of the mainland forming its mouth, a distance of about $1\frac{1}{2}$ miles, the maximum depth in the channel being 11 ft. and the minimum 7 ft., varying slightly when the river is in flood, when the strength of the outward current is increased. In the season of the northers, from September to March, there is generally 11 ft. water on the bar, and sometimes more ; but the depth is very uncertain, for if a freshet takes place, and continues any length of time, it decreases considerably by the accumulation of the sandy deposit. When the rivers are at their highest level, the bar is at its lowest ; and when they are at their lowest point, the channel being contracted, it is scoured out, and becomes deeper. At the close of the rainy season in December, there is at times only 7 ft. of water, but the first norther will increase the depth to $10\frac{1}{2}$ ft. ; and, again, a freshet may soon after reduce it to 7 or 8 ft. In the rainy season vessels have been detained inside the bar two months, waiting for sufficient water to cross it.

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Population.—About 5,000.

Exports.—Cedar, mahogany, fustic, and cattle.

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Mexico—Frontera (continued).

It is high water at full and change on the bar at 10 a.m., and the rise is about 2 ft. There is only one tide in 24 hours, and it is greatly influenced by the winds in the Gulf. From the bar to the Custom House Frontera is a distance of $3\frac{1}{2}$ miles, with a depth inside the bar of from 30 to 40 ft. of water in the Grijalva River, up to and about 10 miles above the Custom House. The river as far up as noted is from $\frac{1}{2}$ to 1 mile wide, which gives a large area for anchorage entirely protected from the sea, with stiff mud bottom. There is a substantial wharf at the Custom House set on iron piling, which measures 195 ft. long by 65 ft. wide, and over 30 ft. of water at the wharf. There are also several small private wharves, suitable for vessels engaged in the coastwise traffic. There is a regular service to Vera Cruz and other ports every month in the year. Supplies can always be obtained in Frontera.

Pilotage.—The channel across the bay is so changeable that a pilot is always necessary, and if a vessel is obliged to wait for one, anchorage may be taken in 6 fathoms with the lighthouse S.E. $\frac{1}{4}$ E. In and out, 2 dols. 50 c. per ft. each way.

Port Charges.—Tonnage Dues:—Steamers, 5 c. per ton; sailing vessels, 3 c. per ton. **Stevedoring:**—Stowing timber—inside the bar, 80 c.; outside the bar, 1 dol. Rafting is unnecessary inside, but a charge of 1 dol. per ton is made for rafting outside the bar.

Harbour Improvement Fee.—See Mexico.

Pro Forma Charges on a vessel of 511 tons reg., 590 tons measurement, drawing 13 ft. 11 in.:—

	Dols.	c.
Stevedore's bill on 590 tons measurement mahogany, and 60 tons logwood and fustic, at 2 dols. 62 c. per ton for mahogany and 50 c. for logwood and fustic	1,575	80
Revenue stamps, on papers—discharging, 8 dols.; loading, 8 dols.; sailing, 4 dols.	20	00
Hoving winch, 25 dols.; getting logs back that were adrift, 26 dols.	51	00
Fresh provisions, etc.	40	00
Provisions for homeward passage	120	00
Doctor's certificate		50
	1,807	30 = £184 10s. 0d.

GUAYMAS.

Guaymas, in lat. 28°0' N., long. 110°59' W., is the chief seaport of the State of Sonora.

Population.—8,650.

Exports.—Gold and silver ores, wheat and other cereals, flour, hides, etc.

Accommodation.—The harbour is one of the best upon the coast, protected by numerous islands and land-locked to all winds. It has a depth of from 2 to 6 fathoms, the latter being immediately off-shore. There is a lighthouse (Eclipse system) on Cape Haro, at the entrance of the bay, with a 20 miles range of light. There is a patent slip for vessels up to 1,000 tons, with a shop annexed for ordinary repairs. Guaymas is in railway communication with the U.S. lines, and has wireless communication with Santa Rosalia. Time of high water is the full and change of the moon.

Mexico—Guaymas (continued).

Pilotage.—1 dol. 75 c. per ft. draught each way. Pilotage must be paid whether a pilot is employed or not.

Port Charges.—Tonnage Dues:—Steamers, 6 c. Mexican per gross ton; sailing vessels, 10 c. per gross ton. **Sanitary Dues:**—Steamers and sailing vessels, 2 c. per gross reg. ton, less 35 per cent. at first port.

Changing Anchorage:—Pilot, 4 dols. each time. **Provisions:**—Fresh beef and mutton at reasonable prices; fish, various kinds, cheap and plentiful; vegetables and fruit scarce and dear. **Water:**—Fresh water, good, $\frac{1}{4}$ c. per gallon in town, $1\frac{1}{2}$ c. at ship's side. **Labourage:**—2 dols. 50 c. per day.

Board of Health:—5 dols.

Pro Forma Charges on a steamer of 5,421·97 gross reg. tons, drawing 6 metres coming in, and 5·795 going out, having already touched at another Mexican port:—

	Dols.	c.
Sanitary dues, 3524·28 net tons, at 1 c. per ton (second port)	35	24
Bill of health for a Mexican port	3	00
Pilotage in, 6 metres, at 1 dol. 75 c. for every 305 mm.	34	43
Pilotage out, 5·795 metres at the same rate	33	25
Changing anchorage 4 times at 4 dols. each time	16	00
	121	92 = £12 9s. 0d.

Note.—On sailing vessels a deduction of 5 per cent. is made on sanitary dues, and the charge for bill of health is 2 dols. for national port, and 3 dols. for foreign port.

LAGUNA DE TERMINOS (Isla del Carmen).

The Island of El Carmen is in lat. $18^{\circ}30'$ N., long. $91^{\circ}30'$ W., about 22 miles in length, and from 1 to 4 miles wide; it extends E.N.E. and S.S.W. At the south end of the island is situated the town and port of Carmen.

Population.—10,298.

Imports.—Agricultural machinery, linen textiles, silk and woollen goods, wine, and oils.

Exports.—Mahogany, cedar, dye-wood, chicle, hides, and tortoise-shell.

Accommodation.—The entrance to the harbour is marked by six buoys; the depth of water on the bar is 12 ft., but the ground being muddy, steamers pass drawing 13 ft. Wharves are built out from the shore to the depth of 15 to 20 ft., and vessels load alongside them to 12 ft.; vessels drawing more have to take the balance of their cargo outside the bar. The depth of water in the harbour is from 25 to 40 ft. Anchorage is excellent and safe in all kinds of weather. On the mainland, opposite the town, there is a lighthouse, painted red, $29\frac{1}{2}$ metres high, visible in clear weather for 16 miles; it has a revolving white light flashing up every thirty seconds. The tower on the west point of the island, known as the Vigia, 22 metres high and painted white, will show at night a steady white light with 270 degrees amplitude, and a red sector to mark the change of bearing of the channel.

General Regulations.—Vessels arriving with cargo must bring a general manifest and invoice, certified by the Mexican Consul at the port of departure, also a list of stores signed by the master. Those arriving from a foreign port in ballast must produce a clearance from the Mexican Consul, and if there is none, the master must make out a manifest in triplicate, of which he keeps one; the second he must mail, registered to the "Sec-

Mexico—Laguna de Terminos (Isla del Carmen) (continued).

retario de Hacienda," at Mexico City, and the third to the collector of customs at the port of destination, for which the post office receipts must be produced on arrival, otherwise he has to pay a fine.

Pilotage.—Compulsory, 1 dol. 75 c. per ft. actual draught. If the vessel draws more than 12 ft., the pilot charges a gratuity of 9 dols. per inch, and 5 dols. boat hire.

Port Charges.—For sailing vessels :—

	Dols.	c.
Tonnage dues, per gross register ton	00	15
Visit of port physician	10	00
Bill of health	3	00
Hospital fee	25	00
For changing berth, each movement	4	00
Translating store list	5	00
Permit for discharging	8	00
" " loading	8	00
Discharging ballast, per ton	00	50
Watchman guarding discharge of ballast (per day)	1	50
Harbour master's fee	4	00
For entering and clearing a vessel	25	00
Steamships ;—Tonnage due, 9 c. per gross register ton, all other charges as above, except commission for entering and clearing vessels	50	00

Vessels after having been to one Mexican port do not pay tonnage fee if calling at any other, but have to pay one-half of the sanitary fees charged at the first one. **Harbour Improvement Fee:**—See Mexico. **Disinfecting and Fumigating:**—When vessels arrive from infected ports a charge of 50 dols. to 60 dols. is made for disinfecting and fumigating. **Labour:**—

From 2 dols. to 4 dols. per day, according to the work required. **Stowing:**—Mahogany and cedar, square logs 1 dol., round logs 1 dol. 25 c. per ton; logwood, 50 c. per ton; other merchandise as per agreement. Vessels loading on the coast have to pay 1 dol. 50 c. stowing mahogany, and 1 dol. for logwood, and have to feed the labourers. **Provisions:**—Beef and provisions are expensive, also vegetables, which are scarce. **Water:**—Vessels taking it on board in their own boat and barrels, free. Rain water expensive.

MANZANILLO.

Manzanillo, in lat. 19°1' N., long. 104°17' W., is the port for the town of Colima.

Population.—About 1,200.

Imports.—General merchandise.

Exports.—Hides and skins.

Accommodation.—The harbour of Manzanillo is under construction, and when completed will be one of the finest on the Pacific coast. A large breakwater, some 1,300 ft. long, with a depth of from 12 to 70 ft., and a width of from 320 ft. at the bottom to 25 ft. at the top, has already been constructed. Ships can anchor in 5 fathoms of water within 400 ft. of the shore. Rise and fall of the tide, about 4 ft. Manzanillo is connected with Colima by railway.

Pilotage.—Compulsory. Steamers, 1.75 dol. per ft., calculated according to the greatest draught, paid on entrance and clearance.

Port Charges.—**Tonnage Dues:**—Steamers: 6 c. per gross ton. Sailing vessels: 10 c. per gross ton (paid at the first port of call).

Wharfage:—Free, if the stevedoring is done by the railway company. **Sani-**

Mexico—Manzanillo (*continued*).

tary Dues :—2 c. per reg. ton, at first port ; 1 c. per reg. ton in the following ports. **Boat Hire** :—5 dol. per day. **Ballast** :—1.50 dol. per ton for sand ballast, delivered alongside the vessel. **Labour** :—2 dol. per day. **Clearance Fees** :—Steamers : Dispatched with cargo, 10 dol. ; in ballast, 6 dol. Sailing vessels : Dispatched with cargo, 8 dol. ; in ballast, 4 dol. **Water** :—Not procurable for vessels, except by courtesy of the port works or railway company. **Brokerage** :—50 dol., plus $2\frac{1}{2}$ per cent. on cash disbursements.

Pro Forma Charges on a barque of 1,640 tons gross (1,563 tons net), with a cargo of railway ties in, and ballast out, drawing 22 ft. loaded :—

	Dols.	c.
Sanitary dues	31	26
Brokerage	50	00
Pilotage, in and out	61	25
Boat hire and petty expenses	10	00
Tonnage dues	164	00
Stamps for bill of health, etc.	14	00
Shore men working on board	150	00
Ballast, 490 tons of sand at 1.50	735	00
	1,215	51 = £124 1s. 9d.

MATAMOROS.

Matamoros, in lat. $25^{\circ}50'$ N., long. $97^{\circ}26'$ W., is situated on the right bank of the Rio Grande, or Rio Bravo del Norte, about 40 miles from its mouth, in the State of Tamaulipas.

Population.—8,347.

Imports.—Manufactured goods, provisions, wines, liquors, agricultural implements, etc.

Exports.—Hides, goat skins, ixtle, wool, cotton, bones, and hair.

Accommodation.—Vessels drawing over 9 ft. anchor in the roadstead in 7 fathoms, 3 miles from shore. Anchorage and holding ground in the roadstead is good.

This port is now of no interest to shippers, as all the business in the transportation of merchandise, inwards and outwards, is performed by the railroads that now reach the frontier.

MAZATLAN.

Mazatlan, in lat. $23^{\circ}12'$ N., long. $106^{\circ}20'$ W., is situated about 8 miles from the mouth of the river of the same name. It is the most important harbour on the west coast of Mexico.

Population.—17,852.

Imports.—Provisions, wines, liquors, manufactured goods, crockery, hardware, etc.

Exports.—Gold, silver, copper, zinc, lead, fish, dried and salted, hides, horns, hair, ixtle, tomatoes, etc.

Accommodation.—Depth of water on the bar at low tide is 9 ft. ; inside, 15 ft. (space limited). The rise of spring tides is from 6 to 8 ft. ; neaps, 4 to 6 ft. The anchorage, about $1\frac{1}{2}$ miles from the wharf, is unsafe from the middle of June until the end of December ; during this period vessels generally anchor further outside, so as to get out to sea in case of need.

During the months of October, November, and December vessels are often

Mexico—Mazatlan (*continued*).

obliged to put to sea at a moment's notice on account of the squalls (chubascos). These squalls are very violent, and a peculiarity is that the barometer gives hardly any warning at all, and if vessels were not occasionally warned from the signal stations there would be more wrecks than there are.

The entrance to the anchorage ground outside the bar is clear, but there is always a pilot to bring vessels in. A boiler shop has been erected at which ordinary repairs can be effected.

Pilotage.—1 peso 75 c. for every 305 mm. (about 1 ft.), and 5 pesos for the assistance of a boat.

Port Charges.—Discharging :—3 pesos 63 c. per ton (is always at merchant's expense). **Tonnage Dues :**—6 c. per ton (at the first port of call); in ballast, free. **Labour :**—2 dols. per day, with a meal. **Sand Ballast :**—1 peso 50 c.; stone ballast, 2 pesos 25 c. per ton. **Water and Provisions :**—Water 2 c. per gallon. Beef, 60 c. per kilo. **Brokerage :**—Commission on shipping and collecting the freight, 5 per cent.

Pro Forma Charges on a steamer of 5,421·97 gross reg. tons. loaded, drawing 5·890 metres coming in, and 6 metres going out.

	Dols.	c.
Sanitary dues, 3,524·28 net tons, at 2 c per ton (first port).	70	49
Bill of health for a Mexican port	3	00
Pilotage, coming in, 5·890 metres, at 1 dol. 75 c. for every 305 mm.	33	80
Pilotage, going out, 6 metres at same rate	34	43
Tonnage dues, 5,421·97 gross tons, at 6 c. per ton	325	32
	467	04 = £47 13s. 6d

Note.—On sailing vessels a deduction of 5 per cent. is made on sanitary dues, and the charge for bill of health is 2 dols. for national port and 3 dols. for foreign port.

MINATITLAN.

Minatitlan, in lat. 18°0' N., long. 94°32' W., is on the left bank of the Coatzacoalcos river, about 24 miles from the mouth. The discovery of petroleum deposits in the vicinity has made this port once more a very active centre.

Population.—3,000.

Import.—Mahogany, cedar, and dye-wood.

Export.—Petroleum.

Accommodation.—There is a depth of 13 ft. on the bar at high water, and 12 ft. at low water. The channel in the river is 600 ft. wide, and has a depth of 24 to 40 ft. Vessels are not allowed to go up and load or discharge without a permit from the Government, as Minatitlan is not a recognized port. There are no means of loading and unloading except by hand.

Pilotage.—1 dol. 75 c. Mexican per ft.

Port Charges.—Vessels enter and clear at the Custom House at Puerto Mexico. **Tonnage Dues :**—10 c. per ton. **Stamps :**—To open register, 8 dols. For bill of health, 50 c., and for dispatch, 4 dols. **Stamp for Guarantee** at Custom House :—10 c. per 100 dols. **Permission to Load** at different Custom House sections, Tonala, Santa Ana, and Minatitlan :—50 c. **Stevedore :**—90 c. per ton, loading and discharging. **Bill of Health :**—American Consul, 5 dols. 50 c. English Consul's Fees : 1 dol. 25 c.

Mexico—Minatitlan (*continued*).

Pro Forma Charges on a steamer of 1,793 net reg. tons, drawing 7 ft. :—

	Dols.	c.
Stamp for dispatch	4	00
Stamps to open register	8	00
„ for bill of health	0	50
„ for guarantee of 3,000 dols., case of contraband, etc., at different sections whilst loading	3	00
Permission to load at different sections	0	50
Stevedore's account	1,242	00
Labour on Sunday (50 per cent. above tariff)	65	50
Tonnage dues	179	30
Pilotage up and down from Minatitlan	24	50
Detention of pilot, 2 days	4	00
English Consul's fees	1	25
American Consul, bill of health	5	50
	1,538	05 = £157 0s. 0d.

PERULA BAY.

(See **Chamela**, p. 933.)

PLAYA COLORADA.

Playa Colorado is in lat. 25°18' N., long. 108°12' W.

Accommodation.—It is an open roadstead. Vessels coming here for dye-wood or other products of the country usually anchor about 4 or 5 miles off shore, in 7 or 8 fathoms, as the bar has only a depth of from 8 to 10 Mexican feet. Only small vessels can enter the bay, which is very winding, and affords the only access to the points of loading known respectively by the names of “El Manglon” and “Playa Colorado.” The Custom House, called Perihuate, is at the entrance of the bay, and is a branch of the Custom House at Mazatlan.

Pilotage.—Vessels take a pilot at Mazatlan, the usual charge being 50 dols.; this price depends on the number of pilots available at the time of sailing. Formerly a fixed rate of 60 dols. was charged.

Port Charges.—Health Dues:—Levied at Mazatlan. Sailing vessels, if bound for any Mexican port, 2 pesos; if bound for any foreign port, 3 pesos. These figures are raised respectively to 3 dols. and 5 dols. for steamers. **Stevedores:**—2 dols. and 2 dols. 50 c. per day. **Water:**—Can be obtained on the Saliaca Island, situated at the entrance to the port of Playa Colorado, by digging for it; care being taken not to dig too deep, as the water, which is very good, then becomes brackish.

PROGRESO.

Progreso is in lat. 21°11' N., long. 89°50' W.

Population.—8,497.

Imports.—Machinery, linens, cottons, beer, tin, packing paper, potatoes, cement, coal, hay, lumber, and salt fish.

Exports.—Sisal hemp, chicle, logwood, hides, and deer-skins.

Accommodation.—Since the year 1872 Progreso has been the principal port of entry on the Yucatan coast. The best anchorage is in 4 to 5 fathoms on a sandy bottom, with the Custom House bearing S.S.E. at a distance of about 4 miles. From this position the cargo lighters have a

Mexico—Progreso (*continued*).

leading wind to and from the shore, with the sea breeze. Land breezes or S.E. winds blow daily until 11 a.m., and from 12 noon there is a sea breeze or N.E. wind. From October to January the wind is generally very strong from the north, and it is often necessary to use two anchors and take necessary precautions against drifting. Captains should always take such a position as to give the lighters wind off and from the ship, and should never anchor in front of the pier. With a south wind the best anchorage is N.E. of the port, and with a N.E. wind the ship should be N.W. of Progreso. With a north wind the ship should be either N.W. or N.E. of the port. There is about 10½ to 13 ft. of water at the pier at high tide, according to wind and season. The approach is rather difficult, due to shoals. The port captain is a good pilot for this work.

Pilotage.—To the pier, about 16 dols., or by arrangement, without accepting responsibility. Being an open roadstead a pilot is not required, unless a vessel wishes to come up to the pier.

Port Charges.—Tonnage Dues (foreign trade):—Vessels in ballast or loaded steamers, 6 c. per gross reg. ton. Sailers, 10 c.; Mexican vessels, 1 c. Steamers pay an additional 3 c., and sailing vessels 5 c., at their first port of call; should they proceed to another Mexican port they only pay the 3 c. and 5 c. respectively. **Health Dues**:—Local bill of health, 5 dols. 50 c. Consular bill of health, according to the tariff of each nation. Coastwise, 3 dols. 50 c. **Sanitary Fees**:—2 c. per net reg. ton at the first Mexican port, and 1 c. per ton at each succeeding port. **Captain of Port Fees**: 2 dols. 50 c. per foot draught, and 8 dols. for mooring and unmooring at the pier. Changing an anchorage, 4 dols. **Towage**:—100 dols. each way, to and from the pier. **Labourage**:—On board, from 3 dols. per day, ship finding food and water. Vessels alongside the pier pay the same, but do not supply food. **Stevedore Rates**:—On hemp, 8 c. per bale (day), 10 c. per bale (night). Other cargo by agreement. **Water**:—Vessels sending their own barrels in the ship's boats fill with well water free. Rain water is very dear, in the dry season especially. **Shipbroker**:—Entering, 50 dols.; clearing, 50 dols. **Provisions**:—Scarce and expensive. **Note**:—Any damage done to the pier, on the vessel coming alongside, is charged to the ship. In the winter months, coming to the pier should be excluded from all charters. In making charters, care should be taken as to clauses for loading or discharging alongside the pier, especially for sailing vessels.

Harbour Improvement Fee.—See Mexico.

Pro Forma Charges on a steamer of 1,000 tons, bringing a general cargo, and leaving with a cargo of hemp:—

	Dols.	c.
Stamps for permit to load and discharge	16	00
Copy of manifest, inward	8	00
Captain of port fees, as per tariff	37	00
Local bill of health	5	50
Stevedore on 4,500 bales of hemp at 8 c. day, and 10 c. night, about	400	00
Labourers for discharging	100	00
Boat hire, 3 dols. per trip, say	12	00
Agency, in and out	100	00
Sanitary dues, 2 c. per net register ton	20	00
Tonnage dues as per tariff	90	00

788 50 = £80 9s. 10d.

Mexico.

PUERTO ANGEL.

Puerto Angel, or Port Angeles, is in lat. $15^{\circ}44'$ N., long. $96^{\circ}41'$ W.

Accommodation.—The bay is broad and open, and vessels should anchor in 12 to 13 fathoms, where they are sheltered from W.S.W. winds, which are the common trade winds. Landing is difficult, as there is always a heavy swell. Puerto Angel is open to foreign and coasting trade.

PUERTO DE SAN BENITO.

San Benito is in lat. $14^{\circ}48'$ N., long. $92^{\circ}16'$ W.

Imports.—Cotton, linen, wool, hardware, crockery, wine, liquor, beer, etc.

Exports.—Coffee, cocoa, indiarubber, hides, and deer-skins.

Accommodation.—San Benito is an open roadstead, and is the port for Tapachula, about 24 miles inland. Anchorage is in 6 fathoms, about $1\frac{1}{2}$ miles from shore. Discharging and loading cargo is done by surf boats. The swell that comes in at times from the N.N.W. is very bad, and if the ship is not moored with a stern anchor discharge will be impracticable. This swell seems to be caused by the north winds in the Gulf of Tehuantepec, and, although the wind is not felt thus far, the swell is felt very severely at times, and lasts for several days together. During the coffee season, from December to May, special steamers call to load when there is sufficient cargo for them. There is a lighthouse here which can be seen 16 miles from shore. Vegetables are hard to procure; a limited supply of plantains and pumpkins can be had occasionally.

Port Charges.—**Bill of Health** :—If the vessel is going to a foreign port, 5 dols.; if a Mexican port, 3 dols. **Sanitary Officer** :—From foreign port, 2 c. per ton; from Mexican port, 1 c. per ton; minimum charge, 10 dols. Cargo can be discharged at the rate of 75 tons per day, not including the breaks caused by the heavy swell. In good weather 100 tons can easily be discharged. All Mexican dues should be paid by charterer, or they will increase a ship's disbursements. San Benito is considered unhealthy, and the officials and labourers only go there when a vessel is expected. The Custom House is situated at Tapachula.

PUERTO MEXICO.

Puerto Mexico (formerly Coatzacoalcos) is in lat. $18^{\circ}12'$ N., long. $94^{\circ}34'$ W., at the mouth of the Coatzacoalcos River, and is the terminus of the Tehuantepec Railway.

Population.—About 6,000.

Imports.—Vegetables, coal, textiles, machinery, etc.

Exports.—Hides, coffee, rubber, mahogany, dye-woods, etc.

Accommodation.—There is a depth of 13 ft. on the bar at high water, and 12 ft. at low water. A channel 110 yards wide, and 29 ft. deep, has been dredged between the jetties, and is still being further widened. Inside there is good anchorage in from 6 to 7 fathoms of water. On the left bank of the river is situated an extensive system of wharves. There are 18 electric cranes, capable of raising 3 tons, for loading or unloading directly from ships' holds into warehouse or wagons on front of the wharf. There

Mexico—Puerto Mexico (continued).

are also 30 electric capstans for mooring and general purposes. The wharves are directly connected with the main line of railway to Salina Cruz.

Pilotage.—1 dol. 75 c. Mexican per ft. **Towage:**—About 50 c. per ton.

Port Charges.—Tonnage Dues:—10 c. per ton. **Port Dues:**—2 c. per ton. **Bill of Health:**—Vessels bound outward to a foreign port, 5 dols.; if bound to a Mexican port, 3 dols. **Port Bill of Health Charges:**—First Mexican port made, 2 c. per ton, and 1 c. per ton at the second port. **Stevedore:**—Loading or discharging cargo, 1 dol. 50 c. per ton. Taking raft (mahogany) alongside, 1 dol. per raft. **Commission on Freight:**—2½ per cent. inwards. **Provisions:**—Fresh beef and vegetables are plentiful and moderate in price, but ship's stores cannot be obtained.

Pro Forma Charges on a steamer of 2,417 reg. tons, loading 4,000 tons of cargo, bound for the United Kingdom:—

	Dols.	c.
Tonnage dues	241	70
Stamps, permission to discharge	8	00
" for dispatch	4	00
" for bill of health	0	50
Pilotage, 13 ft. at 1.75 c. per ft.	22	75
Port bill of health (first port of call)	48	34
Stevedore, loading 4,000 tons cargo	6,000	00
Norwegian Consul's fee	24	17
Translation of documents	5	00

6,354 46 = £648 13s. 9d.

SALINA CRUZ.

Salina Cruz, in lat. 16°10' N., long. 95°12' W., is on the Gulf of Tehuantepec, 16 miles from the city of Tehuantepec, and is the Pacific terminus of the Tehuantepec National Railway.

Population.—About 3,000.

Imports.—Coal, dry goods, wines, liquors, etc.

Exports.—Hides, mahogany and cedar logs, and dried fish.

Accommodation.—The area of the outside harbour is 130 acres. The depth of water in the inner harbour is 33 ft. One kilometre of docks is equipped with electric cranes and modern machinery for the quick handling of cargo.

A new dry dock has been built with an available docking length of 590 ft.; breadth at the entrance at high water ordinary springs is 98 ft. and depth on the sill 31 ft. There are steamship connections with San Francisco, Puget Sound, the Hawaiian Islands, Panama, Vancouver, Hong Kong, and Mexican ports.

Vessels entering Puerto Mexico and Salina Cruz harbours, to deliver or receive goods at those ports, must arrange in advance with the Tehuantepec National Railway Company for berth room, and with respect to the conditions under which the goods will be discharged from or delivered to the vessels, in accordance with the provisions of existing contract between the Government and Railway Company.

Pilotage.—1 dol. 75 c. (3s. 6d.) per ft.

Port Charges.—Tonnage Dues:—6 c. (1½d.) on gross reg. tonnage

Water:—Alongside wharf (minimum charge), 25 dol. (£2 10s.) per ton. If lightered, 2 dols. (4s.) per ton. **Ballast:**—2 dols. 50 c. (5s.) per ton. **Wharf**

Labour and Stevedores:—1 dol. 50 c. to 3 dols. 25 c. (3s. to 6s.) per day.

Mexico.

SAN BLAS.

San Blas, in lat. $21^{\circ}35' N.$, long. $105^{\circ}13' W.$, is the only port in the territory of Tepic, and is about 10 miles south of the mouth of the Rio Santiago.

Population.—2,000.

Imports.—Machinery, chemicals, dry goods, glassware, box shooks, tallow, mining machinery, fertilizers, fence wire, and agricultural implements.

Exports.—Rubber, hides, sulphur, etc.

Accommodation.—There is a good anchorage in the open roadstead on sand and mud, 1,500 yards from the shore. Vessels load and discharge by means of lighters, 8 in number. On the bar at high water springs there is 10 ft. ; at ordinary high water 8 ft., and at low water only 5 ft. Fresh beef and fish in abundance ; vegetables may be had if ordered beforehand from Tepic city ; rice, coffee, beans, peas, fresh bananas, cocoanuts, and lemons, cheap.

Pilotage.—1 dol. 75 c. per ft. draught of the vessel.

Port Charges.—Tonnage Dues :—In the first Mexican port of call 6 c. per reg. ton ; regular steamship lines have a rebate of 60 per cent. In succeeding ports 1 c. per reg. ton, less 35 per cent. **Lighterage :**—From the ship's tackles to the shore ; varies from 1 dol. 50 c. to 2 dols. per ton of 1,000 kilos., according to the merchandise and the weather conditions. **Water :**—Not good in San Blas, and has to be fetched from Matanchel (3 miles) or Miramar (8 miles) in boats. **Brokerage :**—Agent's commission is subject to special agreement.

SAN JOSE DEL CABO BAY.

San Jose del Cabo Bay is in lat. $23^{\circ}3' N.$, long. $109^{\circ}40' W.$

Accommodation.—The anchorage is in 7 to 9 fathoms, a quarter of a mile from the shore.

SANTA ANA.

Santa Ana is in lat. $18^{\circ}12' N.$, long. $93^{\circ}56' W.$

Exports.—Mahogany, etc.

Accommodation.—The usual anchorage off the bar is in 4 fathoms, all cargo being towed off by boats at ship's risk and expense. The depth of water on the bar is about 7 ft. Loading on the coast is safe only from May 5 to September 15. Vessels bound for this place must first proceed to Frontera, as they must be entered and cleared there.

Provisions can rarely be obtained here, or in any of the neighbouring ports, so that vessels should be well supplied for the return voyage.

Pro Forma Charges on a vessel of 630 tons reg., entering in ballast and leaving with a cargo of 710 logs of mahogany (about 730 tons dead weight), lying off the bar two months :—

	Dols.	c.
Clearance	27	75
¹ Pilotage, in and out	61	50
Bringing cargo alongside, and stowing (about 2 dols. a ton)	1,400	00
	1,489	25 = £152 0s. 7d.

¹ Although no pilot was employed.

Mexico.**SANTA ROSALIA.**

Santa Rosalia, in lat. $27^{\circ}25'$ N., long. $112^{\circ}13'$ W., is on the W. coast of the Gulf of California, opposite Guaymas.

Population.—6,000.

Imports.—Coke, coal, mining machinery, flour, hay, lumber, dry goods, hardware, etc.

Exports.—Copper in bars and copper matte.

Accommodation.—There is 12 fathoms of water close to the shore. The harbour is 500 metres long and 400 metres wide. Sandy bottom at anchorage. Sailing vessels discharge coke and coal alongside jetties into conveyors; steamers moor in the centre of the port and discharge by means of lighters; coasting steamers unload at the wharf. The wharf is 370 ft. long by 43 broad, with the railway running along it. At high water there is 24 ft. at the outer end and 14 in the middle; low water 3 ft. less. Ballast is delivered in large lighters carrying 140 tons of sand. There are steam cranes here.

Steamship communication with Guaymas about three times a week, and with San Francisco once a month. Telegraphic communication via Guaymas.

Pilotage.—Not compulsory. 2 dols. 50 c. Mexican per foot. 4 dols. is charged for every movement of the vessel.

Port Charges.—Entrance Fees:—Steamers, 6 c. per reg. ton; sailing vessels, 10 c. per reg. ton. **Clearance Fees:**—Steamers, $1\frac{1}{2}$ c. per reg. ton; sailing vessels, 2 c. per reg. ton; dispatch, 25 dols. **Towage:**—From anchorage to berth, £5, and vice versa; from port to sea, £15. **Ballast:**—3s. 6d. per ton for earth or slag. **Labour:**—2 dols., with food; without food, 2 dols. 50 c. **Brokerage:**—50 dols. (All foreign vessels come consigned to the Boleo Copper Company, and they pay £60, which covers brokerage, pilotage, and all Custom House and port charges.) **Ballast Watchman:**—Whilst taking ballast vessels pay 1 dol. 50 c. per day to the Custom House ballast watchman. **Stevedore:**—Coal, iron, steel rails, and cement, 30 c. U.S. gold per ton. Lumber, 60 c. gold per 1,000 superficial feet.

Pro Forma Charges on a steamer of 5,421.97 gross reg. tons, having called at two Mexican ports with cargo, and calling here before going to a foreign port, drawing 5.795 metres:—

	Dols.	c.
Sanitary dues, 3,524.28 net tons at 1 c. per ton (third port)	35	24
Bill of health for a foreign port	5	00
Pilotage in, 5.795 metres at 2 dols. 50 c. per foot of draught	48	29
Coming alongside and retiring from wharf twice (considered as 4 movements, at 4 dols. each)	16	00
One change of anchorage in roadstead	4	00

108 53 = £11 1s. 7d.

Note.—On sailing vessels a deduction of 5 per cent. is made on sanitary dues, and the charge for bill of health is 2 dols. for national port and 3 dols. for foreign port.

TAMPICO.

Tampico, in lat. $22^{\circ}15'$ N., long. $97^{\circ}51'$ W., is on the river Panuco, about 5 miles from its mouth.

Population.—17,569, including suburbs.

Mexico—Tampico (*continued*).

Imports.—Cotton, linen and woollen goods, groceries, hardware, glass, earthenware, agricultural implements, machinery, lumber, coal, coke, and steel rails.

Exports.—Coffee, fustic, hides, sarsaparilla, sugar, ixtle (vegetable fibre), minerals, asphalt, and cotton seed cake.

Accommodation.—The entrance to the harbour is between two rock jetties of about 1,862 metres (6,050 ft.) in length, and the present depth of water on the bar ranges from 23 ft. at low water to 26 ft. at high water. Vessels drawing 22 ft. can come to the town wharves and discharge their cargoes. The loading and discharging of all vessels is carried on direct at the wharves; no lighterage is required, except in the case of explosives. The present wharves—7 in number—are all on the north bank of the Panuco River, and are capable of accommodating 14 ocean steamers. There is railway connection with the principal cities in Mexico and the United States N.R. Sea-going tugs are always available.

Pilotage.—Payable in and out—8 dols. 20 c. per metre. A vessel shifting her berth in the river has to pay 4 dols. each time.

Port Charges.—Permit to discharge, 8 dols.; permit to load and sail, 12 dols. **Jetty Dues:**—9 dols. 84 c. per metre. **Tonnage Dues:**—Payable at the first port only, on the gross tonnage: for steamships, 6 c.; for sailing vessels, 1 c. **Sanitary Dues:**—2 c. on the gross tonnage; 50 per cent. reduction is granted to vessels carrying the mails and making frequent visits, provided the necessary concession has been acquired from the Mexican Government. **Coaling:**—From barges equipped with special machinery for prompt delivery, 6 dols. 50 c. U.S. currency per ton trimmed into bunkers. Quantities under 100 tons trimming charged extra 1 dol. Mexican per ton. **Water:**—1½ c. Mexican per gallon pumped on board.

Pro Forma Charges on a steamer staying 6 days in port:—

	Dols.	c.
Permit to discharge	8	00
Permit to load	8	00
Permit to sail	4	00
Port charges, inward, 5-54 metres at 9 dols. 84 c.	54	51
Port charges outward, 6-10 metres at 9 dols. 84 c.	60	02
Pilotage inwards, 5-54 metres at 8 dols. 20 c.	45	43
Pilotage outward, 6-10 metres at 8 dols. 20 c.	50	02
Pilotage in river, 1 movement at 4 dols.	4	00
Mexican bill of health, 2	8	00
Sanitary visit, 3,084-21 tons at 2 c. per ton	30	84
English Consul's fees	6	25
Cables and telegrams	41	18
Boat and coach hire, pilot, men running lines, etc.	8	50
Revenue stamps for customs documents, etc.	8	75
Gratuity to customs officers	5	00
Clerks in attendance, chief, 7½ D. and N. at 5 dols.	37	50
Clerks in attendance, ordinary, 18 D. and N. at 3 dols.	54	00
Launch to visit, 15 dols.; Belgian Consul's fee, 2 dols. 33 c.; Spanish, 47 dols. 04 c.; Cuban, 61 dols. 80 c.; French, 10 dols. 80 c.	136	97
Stevedoring	713	98
Agency fee	£10	0 0
5 per cent. on £1,184 ls. 4d. outward freight	59	4 0
5 per cent. on £40 6s. 0d. ticket sales	2	0 3
	£71	4 3 = 690 54
Provisions bill		75 40

2,050 89 = £209 7s. 2d.

Mexico—Tampico (*continued*).

Vessels bringing cargo, other than lumber or fuel, pay to the Tampico Harbour Company 1 peso per 1,000 kilos. (invariably payable by merchandise; B/L should be so noted). This charge is recovered from the consignees of the cargo, or paid by the railway company when the goods are consigned inland.

TODOS SANTOS BAY.

Todos Santos Bay is in lat. 31°49' N., long. 116°35' W.

Accommodation.—The anchorage is in 4 to 5 fathoms, one-third of a mile from the shore, well sheltered from the north.

The town at this anchorage is called Ensenada.

TONALA BAY (Atlantic Coast).

Tonala Bay is in lat. 18°18' N., long. 94°10' W., about 20 miles E. of Coatzacoalcos bar.

Population.—500.

Exports.—Cedar and mahogany.

Accommodation.—The breadth of the channel into the river is about 300 ft., and the depth on the bar is 9½ ft. at high water, and 8½ ft. at low water. Loading and discharging is done by manual labour. Large vessels lie in the open roadstead; smaller vessels load to 9 ft. inside, and finish loading outside the bar. Vessels should be well found in chains, kedges, warps, and triple winch, as they cost an enormous price, even for hiring, and can always be sold for their value if not wanted. Vessels going to Tonalá should proceed to Coatzacoalcos to enter, as Tonalá is not a port of entry. If vessels call at Frontera for orders, this is not necessary.

Pilotage.—1 dol. 75 c. per ft. in, and the same out. **Towage:**—By steam. Out over bar, 50 c. per reg. ton, but vessels are generally towed out by boats, at 25 dols. each boat.

Port Charges.—**Harbour-master's Fee:**—3 dols. 50 c. **Stevedore:**—Loading inside the harbour, 1 dol. per ton; loading outside, 1 dol. 50 c. per ton; raftage outside, 1 dol. per ton extra. **Clearance:**—At Custom House, 25 dols. **Winch Hire:**—Sling, with purchase chain and gins, etc., 25 dols. Hire of crowbars, 1 dol. each. **Provisions:**—No fresh provisions can be obtained. Fresh water can be obtained from wells about 10 miles up the river and at the bar of Tonalá.

Pro Forma Charges on a steamer of 2,000 tons loading 4,000 tons of mahogany, drawing 16 ft. loaded:—

	Dols.	c.
Pilotage inwards	14	00
" outwards	14	00
Pilot boat	12	00
Stamps for Custom House clearance	8	75
Harbour master's fee	3	50
Stamps, bill of health	4	25
Clearance at Custom House	25	00
Stevedore, loading 1,500 tons inside	1,500	00
" " 2,500 tons outside	3,750	00
Raftage on 2,500 tons	2,500	00

7,831 50 = £799 9s. 3d.

Mexico.**TONALA (Pacific Coast).**

Tonala bar is in lat. $16^{\circ}0' N.$, long. $93^{\circ}44' W.$

Population.—About 8,000.

Exports.—Cattle, coffee, hides, and skins.

Accommodation.—There is only $9\frac{1}{2}$ ft. of water on the bar at high tide. Three miles to the E. of La Puerta there is a wharf, 1,000 ft. long, where ships bound to Tonala discharge. On the wharf are steam cranes and hand cranes; steam cranes capable of lifting up to 20 tons. Launches are used for loading and discharging ships, as it would be impracticable for any ship to lie at the wharf owing to the continual swell that sets in on this coast, and which is always worst at full and change of the moon. Ships discharge here all the year round, although during the bad season (June to October inclusive) heavy squalls, accompanied by thunder and lightning of the severest character, occur at frequent intervals, generally coming from the S.W.; a ship with good ground tackle would not drag, providing she had an ample scope of cable, say 75 to 90 fathoms. The squalls only last a few hours. A stern anchor run out facilitates discharging by keeping the vessel's head on to the sea. In the early part of the day it is usually calm, and, if any current is running up or down the coast, the ship will be broadside on to the swell, thus interfering very much with the discharge. Sonconusco Bluff is a good landmark coming from the southward, as it is the only high land extending to the beach, after passing which the houses at La Puerta will soon come in sight. The anchorage is in $9\frac{1}{2}$ to 10 fathoms, about $\frac{1}{2}$ to $\frac{3}{4}$ of a mile off the end of the wharf. The Pacific mail steamers call here on the 17th of each month, bound north, and on the 26th, bound south, Acapulco and Panama being their respective destinations.

Port Charges.—**Provisions** of every description are very scarce and dear, and a ship should have sufficient tinned meats, etc., to last during her stay. **Ballast**:—From 4 to 5 dols. per ton alongside.

TUPILCO.

Tupilco is in lat. $18^{\circ}24' N.$, long. $93^{\circ}27' W.$

Export.—Mahogany.

Accommodation.—The bar has 2 to 4 ft. at high water, and $\frac{1}{2}$ to $\frac{1}{2}$ ft. at low water, all vessels loading in the roads. The best anchorage for taking in cargo is a little to the west of the bar, in 6 to 7 ft. The only mark by which the bar can be recognized is a group of about a dozen old cottages near the entrance. Shipmasters should be very careful when landing or discharging cargo in rough weather. Provisions are very dear. There is very little business carried on at this port now.

Pilotage.—2 dols. 50 c. per ft. in, and the same out; if in ballast, dol. 25 c. per ft. in, and the same out; river pilotage, 12 dols.

Pro Forma Charges on a vessel of 262 tons reg. :—

	Dols.	c.
Stowing and rafting 259 tons, at $2\frac{1}{2}$ dols.	647	50
Picking up logs	120	00
Paid for two logs lost	50	00
Hire of dogs and crowbars	39	00
Messenger to Tabasco with ship's papers for entering	35	00
Anchorage dues, at 25 c.	65	50
Entering and clearing	16	00
Commission on disbursements (5 per cent.)	58	16

1,031 16 = £105 5s. 3d.

Mexico.**TUXPAN.**

Tuxpan, in lat. $20^{\circ}59' N.$, long. $97^{\circ}30' W.$, is 129 miles N.W. of Vera Cruz, and 7 miles from the bar of the Tuxpan River.

Population.—6,000.

Exports.—Cedar, mahogany, vanilla beans, honey, hides, deer skins, pepper, sarsaparilla, rubber, and chicle.

Accommodation.—The depth of water on the bar varies from 4 to 8 ft., according to the tides and prevailing winds. Inside the bar the water is considerably deeper. Vessels anchor about 1 to 2 miles from the bar. When a norther is blowing, communication with the shore is impossible. Cargo is discharged and loaded in small sailing lighters, a small steam-tug being available to tow them. **Lighterage:**—About 2 dols. 50 c. per ton for timber, etc.

VERA CRUZ.

Vera Cruz is in lat. $19^{\circ}9' N.$, long. $96^{\circ}10' W.$ Distance from Liverpool, 4,780 miles.

Population.—32,000.

Imports.—Coal, coke, patent fuel, clothing, hardware, provisions, cotton, silk, linen and woollen goods, wine and spirits, machinery, etc.

Exports.—Coffee, hides, sugar, minerals, dye-woods, cattle, and tobacco.

Accommodation.—There is no bar. The depth available for vessels entering the harbour at high water ordinary spring tides is 36 ft., and $32\frac{1}{2}$ ft. at low water. The harbour has an area of 900 acres, of which 600 acres is available for vessels drawing up to 28 ft. The quayage has a total length of $1\frac{3}{4}$ miles, with a depth alongside at high water ordinary springs of 32 ft. 8 in. Vessels load and discharge by means of lighters, or at the following piers:—**Fiscal Government Pier**, 590 ft. long, available at high water ordinary springs by vessels drawing 28 ft. Depth at pier-side at high water ordinary springs, 31 ft. 8 in., and 28 ft. at low water. There are 6 cranes to lift from 2 to 5 tons. The **Mexican Railway Pier**, 400 ft. long, and the **Inter-Oceanic Railway Pier**, 250 ft. long, both with about the same depth alongside as the Fiscal Government Pier. There are 8 cranes, capable of discharging from 10 to 30 tons per hour each. The harbour and approaches are well lighted. There are two floating docks, one 262 ft. long and 46 ft. wide at entrance, capable of lifting 1,600 tons, and the other of lifting 200 tons. Ordinary repairs can be executed at the railway company's machine shops.

Pilotage.—Compulsory. Inwards or outwards, 1 dol. 75 c. per ft draught. Extra pilotage, if the vessel leaves after sundown, 30 dols. **Towage** (sailing vessels):—From one berth to another, 15 dols. Towing a sailing vessel clear of the harbour, 30 to 50 dols., according to tonnage.

Port Charges.—Tonnage and Light Dues:—Steamers—6 c. per ton gross, with an additional 3 per cent. for port works. Sailing Vessels—10 c. per ton, with an additional 5 per cent. per ton for port works. **Sanitary Dues:**—2 c. per net reg. ton for vessels coming from a foreign port, and 1 c. if from a national port. **Bill of Health:**—On clearing ship, 5 dols. **Mooring or Unmooring:**—10 dols. Pilotage for shifting from one berth to another, 4 dols. (steamers). If the pilot is detained on board through quarantine or other purposes, a charge of 2 dols. per day is made.

ST. PIERRE and MIQUELON.

These are the largest of two small groups of islands belonging to France and lying close to the south coast of Newfoundland. The total area of the islands is 93 square miles, with a population of 4,815.

Commerce.—The islands have no agricultural resources. Nothing of any commercial significance is produced or manufactured in them, and consequently all the necessaries of life are imported. The customs duties levied are those of the general customs tariff of France, which has been made applicable to these islands. The inhabitants live by means of the cod fishery.

Currency, Weights and Measures.—The legal currency is French, but francs, etc., are scarce. 26 fr. to the £ is the rate given by the local bank, and 5 fr. 40 c. is the equivalent of 1 dol., whether of Canadian, United States, or Newfoundland currency. The above are all fixed rates.

WEIGHTS AND MEASURES.

1 barrel (on an average)		= 224 lb.
1 kilo.		= 2·204 lb.
50 kilos. = 1 quintal		= 110·23 lb.
100 kilos. = 1 metric quintal		= 220·4 lb.
1,000 kilos. = 1 metric ton		= 2,204 lb.
1,016 kilos. = 1 ton (avoir.)		= 2,240 lb.
1 litre		= 1·76 pints.
1 metre		= 1·09 yards.
1 centimetre		= 0·39 inch.
1 gramme		= 15·43 grains.

St. Pierre is in regular steam communication with Halifax and Boston, and by two cables with Europe and the American Continent.

ST. PIERRE.

St. Pierre is in lat. 47°44' N., long. 56°14' W

Population.—Island and town, 4,510.

Imports.—Salt, manufactured goods, butter, bread, sea biscuits, salt meats, cider, brandy, etc.

Exports.—Codfish, oils, skins, etc.

Accommodation.—The two islands are separated by a channel 4 miles in width. The roadstead has an area of 160 acres, and affords anchorage in 7 to 15 fathoms of water. At the entrance to the harbour there is a depth at high water springs of 17 ft., ordinary neaps 13 ft. ; and at low water springs of 11 ft. The depth alongside the quays, at high water ordinary springs, is 20 ft.

Vessels are loaded and discharged by lighters (carrying from 10 to 30 tons), and at the quays. Most of the business houses have wharves, at the greater number of which the depth alongside is 19 ft. at ordinary high springs. There are no cranes, but a few hand winches. There is a pulley capable of hoisting 15 tons at the end of one of the quays. There are four patent slips with lifting powers of 600, 400, 200, and 100 tons respectively.

There is a fog siren at Galantry Head, and in fog or drift there is a blast

St. Pierre and Miquelon—St. Pierre (*continued*).

lasting 6 seconds, followed by a silence of 54 seconds. When the fog siren is out of order a cannon is fired every half-hour.

Port Dues.—The rate of the port dues has recently been reduced in the case of fishing vessels fitted out in St. Pierre and over 20 tons register from 3 to 2 fr. per ton per annum. The principal rates are now as follows :—

ANNUAL DUES.

	Francs.	£	s.	d.
Per vessel, of 15 to 20 tons register	25	1	0	0
Per ton for fishing vessels over 20 tons, fitted out in the colony	2	0	1	8
Per ton for other fishing vessels over 20 tons, as also for trading vessels over that tonnage	3	0	2	6

Wharf Dues.—Vessels of from 50 to 100 tons pay 12s. per day whilst discharging or loading cargo alongside the quay.

MIQUELON AND LANGLADE.

The two islands Miquelon and Langlade, or Great and Little Miquelon, lie in lat. 47°46' N., long 56°15' W.

Population.—505.

Accommodation.—Miquelon Bay is exposed to winds from the E. There is 3 fathoms close to the shore. On January 18, 1908, the fog siren on Point Plate, Little Miquelon, was replaced by another fog whistle, giving two sounds of 4 seconds' duration, separated by an interval of 4 seconds and followed by a silence of 48 seconds. The average range of the new whistle is 6 miles, but under certain conditions of weather may be reduced to 2 miles. The nature of the old signal will be shown by reading 8 seconds for 4 seconds in both places), 36 seconds for 48 seconds, and 8 to 15 miles for range.

Port Charges.—Navigation Dues :—Vessels calling here, not landing cargo of any sort, under 50 reg. tons and over 20 reg. tons, 25 fr. per year ; over 50 reg. tons, 50 c. per reg. ton. Vessels landing cargo, 3 fr. per reg. ton per year.

THE UNITED STATES.

The United States form a Federal Republic, and embrace the middle portion of North America, extending from the Atlantic to the Pacific, and from the Great Lakes to the Gulf of Mexico and the Rio Grande del Norte, together with the detached territory of Alaska, which forms the north-western portion of the continent, and the territory of Hawaii. The combined States and territories have a land area of 3,567,563 square miles, (including also water area in the case of Alaska and Hawaii), and a population estimated in 1908 at 84,500,000. The United States proper has a coast line of 12,000 miles, of which no less than five-sixths is on the Atlantic and Gulf of Mexico, with only one-sixth on the Pacific Ocean.

Commerce.—The commerce of the United States is of vast magnitude, the foreign trade alone totalling seven hundred million pounds sterling per annum, the imports during the year ended December 31, 1907, being valued at £320,000,000 and the exports at £380,000,000. These values are arrived at from the declarations which all importers and exporters are by law compelled to make, and also from the invoices, etc., which must accompany all shipping papers. For imports, the invoices are signed by an American Consul; for exports, by the exporter or agent at the port of shipment. Great Britain enjoys "most favoured nation treatment" in its commercial transactions with the United States.

Mercantile Marine.—On June 30, 1907, the commercial navy of the United States consisted of 24,911 bottoms, having a combined tonnage of 6,938,794, divided as under:—

	No.	Tons.
Sailing ships	10,866	1,814,444
Steam vessels	10,050	4,279,368
Canal boats	731	81,773
Barges	3,264	763,209
Total.	24,911	6,938,794

This total tonnage of 6,938,794 was distributed as shown in the following table:—

Divisions.	Sailing Ships.		Steamers.		Canal Boats.		Barges.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Atlantic and Gulf	9,541	1,208,535	5,215	1,594,537	202	25,884	2,235	606,358	17,193	3,435,314
Porto Rico	56	4,085	6	1,298	—	—	—	—	62	5,383
Pacific	783	331,462	1,440	467,709	—	—	668	59,478	2,891	858,649
Hawaii	20	14,258	30	13,933	—	—	—	—	50	28,191
Northern Lakes.	466	256,104	1,873	2,044,553	529	55,889	235	83,195	3,103	2,439,741
Western Rivers	—	—	1,486	157,338	—	—	126	14,178	1,612	171,516
Total 1907	10,866	1,814,444	10,050	4,279,368	731	81,773	3,264	763,209	24,911	6,938,794

The United States.

Internal Communications.—The large rivers, lakes, and canals of the United States form extensive lines of waterway for the movement of its internal traffic, more especially for heavy and bulky articles which can be conveyed more cheaply, if less expeditiously, by water than by rail. The latest available returns show that these waterways have a total length of not less than 50,000 miles. So far as the rivers are concerned, those in the Mississippi basin are quite the most important, owing to the fact that only the lower courses of the Appalachian rivers across the coastal plain are navigable, except in the case of the Hudson, which crosses the Appalachian barrier from north to south, and is navigable for ocean steamers for over 100 miles from its mouth. The Mississippi affords a waterway from St. Paul, Minnesota, and Pittsburg, by way of the Ohio, to the Gulf of Mexico. A proposal is now on foot, and is being warmly advocated in very influential quarters, to connect the river with the lake system by the construction of a canal. On the Pacific coast the Columbia is navigable for 500 miles, and the other large rivers for 100 to 150 miles. Of the numerous canals, the most important are the Erie and the Sault Ste. Marie. The navigability of the Hudson river from New York to Albany, and the opening up of the prairie region, led to the building of the Erie canal, which connects the Hudson, by way of the Mohawk Valley and other streams and lakes, with the Great Lakes at Buffalo. This most important work has established a means of transport from the Atlantic seaboard to the great interior region, and provided a ready method by which the great stores of grain and iron ore, etc., may be brought to the head of ocean navigation, and thence distributed to the markets of the world. The canal is now being enlarged and generally improved. The Sault Ste. Marie canal connects Lakes Huron and Superior, whilst the Champlain canal joins up the Hudson river with the St. Lawrence river in Canada. The tonnage passing over these canals is very great, that of the Sault Ste. Marie being three times as much as in the case of the Suez canal.

But important as are the means of transport thus provided, the railway as a carrying agent for merchandise is of the first consideration. There are now (1908) something like 230,000 miles of track open for public traffic, exclusive of double tracks, sidings, etc.

Of the great trunk lines which give access from the Atlantic to the Pacific seaboard, the most important are the Northern Pacific Railway, the Pennsylvania Railroad, the New York Central, the Union Pacific, and the Southern Pacific. The Northern Pacific runs not far south of the international boundary from Duluth, near the head of Lake Superior, through Minnesota, North Dakota, Montana, Idaho, and Washington to Tacoma, whence lines run north to Puget Sound, and south to Portland, and by the Southern Pacific to San Francisco. From New York and Philadelphia the Pennsylvania Railroad and the New York Central open up communication with Chicago and St. Louis. From Chicago, the Chicago, Milwaukee, and St. Paul Railroad runs to Council Bluffs at Omaha, where it communicates with the Union Pacific. This last named line proceeds through Omaha, via North Platte and Green River, to Ogden, where it joins the Southern Pacific Railway (formerly the Central Pacific), proceeding thence to Oakland, opposite San Francisco, passing en route the cities of Reno and Sacramento. The Southern Pacific also establishes communication between San Francisco,

The United States.

via Los Angeles and El Paso on the Rio Grande (where it meets the Mexico Central trunk line), with Houston, Galveston, and New Orleans.

The Gulf of Mexico is connected with the Great Lakes by the Illinois Central Railway which runs from New Orleans to Chicago.

St. Louis and Chicago are brought into communication with Kansas City by means of the Wabash and the Atchison, Topeka, and Sante Fé Railroads respectively. From Kansas City a branch of the Union Pacific proceeds, via Junction City and Limon, to Denver, from whence it runs northward to Cheyenne, where it connects with the main Union Pacific line from Omaha to Ogden.

The Spokane, Portland, and Seattle Railway is a new line owned jointly by the Great Northern and Northern Pacific Railways. It connects both lines direct with Portland by an easy grade along the north bank of the Columbia river, extending from Pasco, on the Northern Pacific main line, for 221 miles to Vancouver, and thence crossing the Columbia and Willamette rivers, for 10 miles to Portland; 33 miles of the Portland end and 20 miles of the Pasco end are double tracked. A large wharf and warehouses are being built at the Portland terminus to facilitate the loading of deep-sea vessels. The principal object of the railway is to avoid the expensive carriage of goods over the Cascade Mountains to Puget Sound.

On the east and west a number of lines connect the principal centres of population with the ports on the Atlantic and Pacific coasts respectively.

The telegraph and telephone systems in the Republic are worked by private companies, the former by the Western Union Telegraph Company, and the latter by the American Telephone and Telegraph Co. The Western Union had, in 1907, 24,760 offices, with 205,646 miles of line, and 1,321,199 miles of wire. The Telephone Co., and the companies associated with it, controlled 5,698,258 instruments in the hands of licensees paying rent to the Company.

The Government postal work is carried on in 62,663 offices, the mail matter passing through the hands of the officials being very large. Money orders are issued by the Postal Department. Postage between the United Kingdom and America, and vice versa, was reduced to 1*d.* per $\frac{1}{2}$ oz. as from October 1, 1908, and efforts are now (December, 1908), being made to secure the same benefit as between Germany and America.

Currency, Weights and Measures.—Dollars and cents are practically the only denominations of money used in accounts; they are as under: 1 cent = $\frac{1}{2}$ *d.*; 1 dollar = 4*s.* 1·31*d.*; 4·86 dollars = £1 sterling.

The use of the metric system was authorized as permissive by Act of Congress in 1866, and under this Act a set of standard weights and measures of the metric system was supplied to each State in the Union, but so far the old system more generally obtains. In an order, dated July 1, 1908, the Secretary of the United States Treasury declared the following to be taken to be the value of foreign coins in estimating the value of all foreign merchandise exported to the United States, expressed in any of such metallic currencies.

VALUES OF FOREIGN COINS.

Country.	Standard.	Monetary Unit.	Value in terms of U.S. gold Dollar.	Coins.
Argentina Republic	Gold	Peso	\$0.965	Gold : Argentine (\$4.824) and $\frac{1}{2}$ Argentine. Silver : peso and divisions.
Austria-Hungary	Gold	Crown	.203	Gold : 10 and 20 crowns. Silver : 1 and 5 crowns.
Belgium	Gold	Franc	.193	Gold : 10 and 20 francs. Silver : 5 francs.
Bolivia	Silver	Boliviano	.393	Silver boliviano and divisions.
Brazil	Gold	Milreis	.546	Gold : 5, 10, and 20 milreis. Silver : $\frac{1}{2}$, 1, and 2 milreis.
British Possessions, N.A. (except Newfoundland)	Gold	Dollar	1.000	
Central American States— Costa Rica	Gold	Colon	.465	Gold : 2, 5, 10, and 20 colons (\$9.307). Silver : 5, 10, 25, and 50 centimos.
British Honduras	Gold	Dollar	1.000	
Guatemala	Gold	Dollar	1.000	
Honduras	Gold	Dollar	1.000	
Nicaragua	Silver	Peso	.393	Silver : Peso and divisions.
Salvador	Gold	Peso	.365	Gold : Escudo (\$1.825), doubloon (\$3.650), and condor (\$7.300). Silver : Peso and divisions.
Chile	Gold	Peso	.365	
		Amoy	.644	
		Canton	.642	
		Cheefoo	.616	
		Chun Kiang	.629	
		Fuchau	.595	
		Haikwan (Cus- toms)	.655	
		Hankow	.602	
		Kiaochow	.624	
		Nankin	.637	
		Niuchwang	.604	
		Ningpo	.619	
		Peking	.628	
		Shanghai.	.588	
		Swatow	.505	
		Takau	.648	
		Tientsin	.624	
		Hong Kong	.423	
		British	.423	
		Mexican	.427	
China	Silver	Tael		

Colombia	Gold	Dollar	1-000	Gold : Condor (\$9-647) and double condor. Silver : Peso.
Denmark	Gold	Crown	-268	Gold : 10 and 20 crowns.
Ecuador	Gold	Sucre	-487	Gold : 10 sueres (\$4-8665). Silver : Sucre and divisions.
Egypt	Gold	Pound (100 piastres)	4-943	Gold : Pound (100 piastres), 5, 10, 20, and 50 piastres. Silver : 1, 2, 5, 10, and 20 piastres.
Finland	Gold	Mark	-193	Gold : 20 marks (\$3-859), 10 marks (\$1-93).
France	Gold	Franc	-193	Gold : 5, 10, 20, 50, and 100 francs. Silver : 5 francs.
German Empire	Gold	Mark	-238	Gold : 5, 10, and 20 marks.
Great Britain	Gold	Pound sterling	4-866½	Gold : Sovereign (pound sterling) and ½ sovereign.
Greece	Gold	Drachma	-193	Gold : 5, 10, 20, 50, and 100 drachmas. Silver : 5 drachmas.
Haiti	Gold	Gourde	-965	Gold : 1, 2, 5, and 10 gourdes. Silver : Gourde and divisions.
India (British)	Gold	Pound sterling *	4-866½	Gold : Sovereign (pound sterling). Silver : Rupee and divisions.
Italy	Gold	Lira	-193	Gold : 5, 10, 20, 50, and 100 lire. Silver : 5 lire.
Japan	Gold	Yen	-498	Gold : 5, 10, and 20 yen. Silver : 10, 20, and 50 yen.
Libania	Gold	Dollar	1-000	Gold : 5 and 10 pesos. Silver dollar † (or peso) and divisions.
Mexico	Gold	Peso †	-498	Gold : 10 florins. Silver : 2½, 1 florin and divisions.
Netherlands	Gold	Florin	-402	Gold : 2 dollars (\$2-028).
Newfoundland	Gold	Dollar	1-014	Gold : 10 and 20 crowns.
Norway	Gold	Crown	-268	Gold : 1, 2½, 5, 10, and 20 balboas. Silver : Peso and divisions.
Panama	Gold	Balboa	1-000	Gold : ½, 1, and 2 toman (\$3-409). Silver : ¼, ½, 1, 2, and 5 krans.
Persia	Silver	Kran	-072	Gold : ½ and 1 libra. Silver : Sol and divisions.
Peru	Gold	Libra	4-866½	Gold : ½ and 1 libra. Silver : Sol and divisions.
Philippine Islands	Gold	Peso	-500	Silver : Peso 10, 20, and 50 centavos.
Portugal	Gold	Milreis	1-080	Gold : 1, 2, 5, and 10 milreis.
Russia	Gold	Rouble	-515	Gold : 5, 7½, 10, and 15 roubles. Silver : 5, 10, 15, 20, 25, 50, and 100 copeks.
Spain	Gold	Peseta	-193	Gold : 25 pesetas. Silver : 5 pesetas.
Straits Settlements	Gold	Pound sterling §	4-866½	Gold : Sovereign (pound sterling). Silver : Dollar and divisions.
Sweden	Gold	Crown	-268	Gold : 10 and 20 crowns.
Switzerland	Gold	Franc	-193	Gold : 5, 10, 20, 50, and 100 francs. Silver : 5 francs.
Turkey	Gold	Piastre	-044	Gold : 25, 50, 100, 250, and 500 piastres.
Uruguay	Gold	Peso	1-034	Gold : Peso. Silver : Peso and divisions.
Venezuela	Gold	Bolivar	-193	Gold : 5, 10, 20, 50, and 100 bolivars. Silver : 5 bolivars.

NOTE.—The coins of silver-standard countries are valued by their pure silver contents, at the average market price of silver for the three months preceding the date of the circular.

* The sovereign is the standard coin of India, but the rupee (\$0-3244) is the current coin, valued at fifteen to the sovereign.

† Seventy-five centigrammes fine gold.

‡ Value in Mexico, \$0-498.

§ The current coin of the Straits Settlements is the silver dollar issued on Government account, and which has been given a tentative value of \$0-567758½.

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The weights and measures usually employed are the same as those in use in England, with the exception that in place of the British cwt. a cental of 100 lb. is used, with the consequent short ton of 2,000 lb. Another variation from present British standards is that the measures of capacity are the same as those that were in use in the United Kingdom prior to January 1, 1826, and which are known as the old "Winchester" gallon and bushel. These measures are :—

DRY GOODS.

4 gills	= 1 pint	= .969	British Imperial pint.
2 pints	= 1 quart	= 1.938	" " "
4 quarts	= 1 gallon	= .969	" " gallon.
2 gals.	= 1 peck	= 1.938	" " "
4 pecks	= 1 bushel	= .969	" " bushel.

WINE AND SPIRIT MEASURE.

4 gills	= 1 pint	= .833	British Imperial pint.
2 pints	= 1 quart	= 1.666	" " "
4 quarts	= 1 gallon	= .833	" " gallon.

BEER MEASURE.

4 gills	= 1 pint	= 1.017	British Imperial pint.
2 pints	= 1 quart	= 1.017	" " quart.
4 quarts	= 1 gallon	= 1.017	" " gallon.

Emigration and Immigration Regulations.—There is little or no emigration from the United States, and no regulations bearing upon the subject. So far as the transportation of immigrants into the country is concerned, the regulations are very stringent, and are of special interest to shipowners and masters. Aliens are admitted into the United States, subject to the provisions of an Act of Congress passed in February, 1907, amended December, 1908, which provides :—

(1) The payment of a poll tax of four dollars for every alien. The tax thus imposed is to constitute a lien upon the vessel, and to be a debt in favour of the United States against the owner or owners, the payment of which may be enforced by legal process.

(2) The following classes of aliens are excluded from admission into the United States :—

All idiots, imbeciles, feeble-minded persons, epileptics, insane persons, and persons who have been insane within five years previous ;

Persons who have had two or more attacks of insanity at any time previously ;

Paupers ;

Persons likely to become a public charge ;

Professional beggars ;

Persons afflicted with tuberculosis, or with a loathsome or dangerous contagious disease ;

Persons otherwise morally or physically defective in a way which may affect their ability to earn a living ;

Persons who have been convicted of a felony or other crime or misdemeanour involving moral turpitude ;

Polygamists, anarchists, or persons who believe in or advocate the overthrow by force or violence of the Government of the United States, or of all government, or of all forms of law, or the assassination of public officials ;

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Prostitutes, and persons who procure or attempt to bring in prostitutes or women for the purpose of prostitution ;

Persons hereinafter called contract labourers, who have been induced or solicited to migrate to the States by offers or promises of employment, or in consequence of agreements, oral, written, or printed, express or implied, to perform labour in the States of any kind, skilled or unskilled.

Persons who have been, within one year from the date of the application for admission to the United States, deported as having been induced or solicited to migrate as above described ; and also

Any person whose ticket or passage is paid for with the money of another, or who is assisted by others to come, unless it is affirmatively and satisfactorily shown that such person does not belong to the foregoing excluded classes ; and that the said ticket or passage was not paid for by any corporation, association, society, municipality, or foreign government, either directly or indirectly ;

All children under sixteen years of age, unaccompanied by one or both of their parents, at the discretion of the Secretary of Commerce and Labour, or under such regulations as he may from time to time prescribe ;

Provided that nothing in this Act shall exclude, if otherwise admissible, persons convicted of an offence purely political, not involving moral turpitude ;

Provided further, that the provisions of this section relating to the payments for tickets or passage by any corporation, association, society, municipality, or foreign government shall not apply to the tickets or passage of aliens in immediate and continuous transit through the United States to foreign contiguous territory ;

Provided further that skilled labour may be imported, if labour of like kind unemployed cannot be found in the United States ; and

Provided further that the provisions of this law applicable to contract labour shall not be held to exclude professional actors, artists, lecturers, singers, ministers of any religious denomination, professors for colleges or seminaries, persons belonging to any recognized learned profession, or persons employed strictly as personal or domestic servants.

(3) That no transportation company or owner or owners of vessels, or others engaged in transporting aliens, shall either by writing, printing, or oral representation, solicit, invite, or encourage the immigration of any aliens into the United States, but this shall not be held to prevent transportation companies from issuing letters, circulars, or advertisements, stating the sailings of their vessels, and terms, and facilities of transportation therein.

(4) That any person, including the master, agent, owner, or consignee of any vessel, who shall bring into or land in the United States, by vessel or otherwise, or who shall attempt, by himself or through another, to bring into or land in the United States, by vessel or otherwise, any alien not duly admitted by an immigrant inspector or not lawfully entitled to enter the United States, shall be deemed guilty of a misdemeanour, and shall, on conviction, be punished by a fine not exceeding one thousand dollars, or by imprisonment for a term not exceeding two years, or by both such fine and imprisonment for each and every alien so landed or brought in, or attempted to be landed or brought in.

(5) That it shall be unlawful for any person, including any transportation company other than railway lines entering the United States from foreign

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contiguous territory, or the owner, master, agent, or consignee of any vessel, to bring to the United States any alien subject to any of the following disabilities : Idiots, imbeciles, epileptics, or persons afflicted with tuberculosis, or with a loathsome or dangerous contagious disease, and if it shall appear to the satisfaction of the Secretary of Commerce and Labour that any alien so brought to the United States was afflicted with any of the said diseases or disabilities at the time of foreign embarkation, and that the existence of such disease or disability might have been detected by means of a competent medical examination at such time, such person or transportation company, or the master, agent, owner, or consignee of any such vessel, shall pay to the collector of customs of the customs district in which the port of arrival is located the sum of one hundred dollars for each and every violation of the provisions of this section ; and no vessel shall be granted clearance papers pending the determination of the question of the liability to the payment of such fine, and in the event such fine is imposed, while it remains unpaid, nor shall such fine be remitted or refunded : *Provided*, That clearance may be granted prior to the determination of such questions, upon the deposit of a sum sufficient to cover such fine and costs, such sum to be named by the Secretary of Commerce and Labour. The decision of the special board of inquiry to be final as to the rejection of aliens suffering from any of the diseases mentioned.

(6) That upon the certificate of a medical officer of the United States Public Health and Marine Hospital Service to the effect that a rejected alien is helpless from sickness, mental or physical disability, or infancy, if such alien is accompanied by another alien, whose protection or guardianship is required by such rejected alien, such accompanying alien may also be excluded, and the master, agent, owner, or consignee of the vessel in which such alien and accompanying alien are brought shall be required to return said alien and accompanying alien, in the same manner as vessels are required to return other rejected aliens.

(7) That upon the arrival of any alien by water, at any port within the United States, it shall be the duty of the master or commanding officer of the steamer, sailing, or other vessel having said alien on board, to deliver to the immigration officers at the port of arrival lists or manifests made at the time and place of embarkation of such alien, which shall, in answer to questions at the top of said list, state as to each alien the full name, age, and sex ; whether married or single ; the calling or occupation ; whether able to read or write ; the nationality ; the race ; the last residence ; the name and address of the nearest relative in the country from which the alien came ; the seaport for landing in the United States ; the final destination, if any, beyond the port of landing ; whether having a ticket through to such final destination ; whether the alien has paid his own passage, or whether it has been paid for him by any other person, or by any corporation, society, municipality, or government, and, if so, by whom ; whether in possession of fifty dollars, and, if less, how much ; whether going to join a relative or friend, and, if so, what relative or friend, and his or her name and complete address ; whether ever before in the United States, and, if so, when and where ; whether ever in prison or almshouse or an institution or hospital for the care and treatment of the insane or supported by charity ; whether a polygamist ; whether an anarchist ; whether coming by reason of any offer, solicitation, promise, or agreement, express or implied, to

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perform labour in the United States ; and what is the alien's condition of health, mental and physical, and whether deformed or crippled, and, if so, for how long and from what cause ; that it shall further be the duty of the master or commanding officer of every vessel, taking alien passengers out of the United States, from any port thereof, to file before departure therefrom, with the collector of customs of such port, a complete list of all such alien passengers taken on board. Such lists shall contain the name, age, sex, nationality, residence in the United States, occupation, and the time of last arrival of every such alien in the United States, and no master of any such vessel shall be granted clearance papers for his vessel until he has deposited such list or lists with the collector of customs at the port of departure, and made oath that they are full and complete as to the name and other information herein required concerning each alien taken on board his vessel. *Provided* that in the case of vessels making regular trips to ports of the United States the Commissioner-General of Immigration, with the approval of the Secretary of Commerce and Labour, may, when expedient, arrange for the delivery of such lists of outgoing aliens at a later date. *Provided further*, that it shall be the duty of the master or commanding officer of any vessel sailing from ports in the Philippine Islands, Guam, Porto Rico, or Hawaii to any port of the United States on the North American Continent, to deliver to the immigration officers at the port of arrival lists or manifests made at the time and place of embarkation, giving the names of all aliens on board said vessel.

(8) That all aliens arriving by water at the ports of the United States shall be listed in convenient groups, and no one list or manifest shall contain more than thirty names. To each alien or head of a family shall be given a ticket on which shall be written his name, a number or letter designating the list in which his name and so forth is contained, and his number on said list, for convenience of identification on arrival. Each list or manifest shall be verified by the signature, and the oath or affirmation of the master or commanding officer, or the first or second below him in command, taken before an immigration officer at the port of arrival, to the effect that he has caused the surgeon of said vessel, sailing therewith, to make a physical and oral examination of each of said aliens, and that from the report of said surgeon, and from his own investigations, he believes that no one of the said aliens is subject to refusal on account of the restrictions imposed by Clause 2. This statement is to be signed and sworn to by the surgeon, but, if no surgeon sails with any vessel bringing aliens, the mental and physical examinations, and the verifications of the lists or manifests, shall be made by some competent surgeon employed by the owners of the said vessel.

(9) That it shall be the duty of the owners, officers, or agents of any vessel bringing an alien to the United States to prevent the landing of such alien in the United States at any time or place, other than as designated by the immigration officers, and the negligent failure of any such owner, officer, or agent to comply with the foregoing requirements shall be deemed a misdemeanour, and be punished by a fine in each case of not less than one hundred nor more than one thousand dollars, or by imprisonment for a term not exceeding one year, or by both such fine and imprisonment ; and every such alien so landed shall be deemed to be unlawfully in the United States, and shall be deported.

(10) That all aliens brought to the country in violation of law shall,

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if practicable, be immediately sent back to the country whence they respectively came on the vessels bringing them. The cost of their maintenance while on land, as well as the expense of the return of such aliens, shall be borne by the owner or owners of the vessels on which they respectively came ; and if any master, person in charge, agent, owner, or consignee of any such vessel shall refuse to receive back on board thereof, or on board of any other vessel owned or operated by the same interests, such aliens, or shall fail to detain them thereon, or shall refuse or fail to return them to the foreign port from which they came, or to pay the cost of their maintenance while on land, or shall make any charge for the return of any such alien, or shall take any security from him for the payment of such charge, such master, person in charge, agent, owner, or consignee shall be deemed guilty of a misdemeanour, and shall, on conviction, be punished by a fine of not less than three hundred dollars for each and every such offence ; and no vessel shall have clearance from any port of the United States while any such fine is unpaid : *Provided*, That the Commissioner-General of Immigration, with the approval of the Secretary of Commerce and Labour, may suspend, upon conditions to be prescribed by the Commissioner-General of Immigration, the deportation of any alien found to have come in violation of any provision of this Act, if, in his judgment, the testimony of such alien is necessary on behalf of the United States Government in the prosecution of offenders against any provision of this Act : *Provided*, That the cost of maintenance of any person so detained resulting from such suspension of deportation shall be paid from the "immigrant fund," but no alien certified to be suffering from tuberculosis or from a loathsome or dangerous contagious disease other than one of quarantinable nature shall be permitted to land for medical treatment thereof in any hospital in the United States.

(11) It shall not be lawful for the master of a steamship or other vessel whereon immigrant passengers, or passengers other than cabin passengers, have been taken at any port or place in a foreign country or dominion (ports and places in foreign territory contiguous to the United States excepted) to bring such vessel and passengers to or take from any port or place in the United States, unless the compartments, spaces, and accommodations hereinafter mentioned have been provided, allotted, maintained, and used for and by such passengers during the entire voyage, unobstructed by cargo, stores, or goods.

The master of a vessel coming to a port or place in the United States in violation of any of the provisions of this section shall be deemed guilty of a misdemeanour ; and if the number of steerage passengers carried or brought in the vessel, or in any compartment, space, poop, or deck-house thereof, is greater than the number allowed to be carried or brought therein, respectively, as hereinafter prescribed, the said master shall be fined fifty dollars for each and every such passenger in excess of the proper number, and may also be imprisoned, not exceeding six months. In computing the number of passengers carried or brought in any vessel, children under one year of age shall not be included, and two children between one and eight years of age shall be counted as one passenger ; and any person brought in such vessel who shall have been during the voyage taken from any other vessel wrecked or in distress on the high seas, or have been picked up at sea from any boat, raft, or otherwise, shall not be included in such computation.

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The expression "steerage passengers" means all passengers except cabin passengers, and persons shall not be deemed cabin passengers unless the space allotted to their exclusive use is in the proportion of at least 36 clear superficial feet to each passenger.

The expression "lowest passenger deck" means the deck next below the water line; and the expression "passenger deck" includes every deck or portion of a deck which is above the lowest passenger deck and is appropriated for passengers.

A vessel shall not carry passengers, whether cabin or steerage passengers, on more than one deck below the water line.

The height between that part of any deck on which steerage passengers are carried and the deck immediately above it shall not be less than 6 ft.

No steerage passengers shall be carried on the lowest passenger deck, unless it is efficiently lighted by side scuttles, and otherwise to the satisfaction of the inspector.

No greater number of steerage passengers shall be carried on the lowest passenger deck than in the proportion of one steerage passenger to every 21 clear superficial ft. allotted to their use. If, however, the height between the lowest passenger deck and the deck immediately above it is less than 7 ft., and the apertures, exclusive of side scuttles, through which light and air are admitted are less in size than in the proportion of 3 sq. ft. to every 100 superficial ft. of that deck, no greater number of steerage passengers shall be carried on that deck than in the proportion of one steerage passenger to every 30 clear superficial ft. thereof, subject to the allowance for measurement of public rooms, lavatories, and bath rooms, if any, provided for by these regulations.

No greater number of steerage passengers may be carried on a passenger deck than in the proportion of one steerage passenger to every 18 clear superficial ft. of deck allotted to their use, subject to the allowances for measurement of public rooms, lavatories, and bath rooms, if any. If, however, the height between any passenger deck and the deck immediately above it be less than 7 ft., no greater number of steerage passengers may be carried on that deck than in the proportion of one steerage passenger to every 21 clear superficial ft. thereof, subject to the allowance for measurement of public rooms, lavatories, and bath rooms, if any.

A vessel, whatever be the superficial space of the passenger decks and of the lowest passenger deck, shall not carry a greater number of steerage passengers on the whole than in the proportion of one steerage passenger to every 5 superficial ft. of air or promenade space provided on a deck so open as not to be included in the tonnage and approved by the inspector, and this space shall not be counted or included in the area available for any other passengers, or in other areas for steerage passengers prescribed by this section.

In the measurement of the passenger decks and of the lowest passenger deck, the space occupied by that part of the personal baggage of the steerage passengers which the inspector permits to be carried there shall be included, and also, on whatever deck located, commodious and suitable dining rooms, lounging rooms, smoking rooms, lavatories, toilet rooms, and bath rooms :
Provided that

(a) The space in any place appropriated to the use of steerage passengers in which they sleep shall not be less than 18 superficial ft. in the case of

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the lowest passenger deck, and 15 superficial ft. in the case of a passenger deck.

(b) Each space so included in the measurement must be clearly marked to the satisfaction of the inspector as being exclusively appropriated for the use of the steerage passengers.

Each separate compartment in which steerage passengers are berthed shall be conspicuously marked, showing the total area of such compartments.

General Shipping Regulations.—Entrance Inwards.—Entry of vessels, discharge of cargo. Vessels from a foreign country arriving within a Customs district of the United States must, under penalty of forfeiture, make entry at the port of entry for such district, and discharge so much of her cargo as is destined therefor. The collector may permit such portions of her cargo as may be in bulk to be unladen at the expense of parties interested, and under the supervision of Customs officers at other places within the district, provided the places have been designated for the purpose by the Secretary of the Treasury. Dutiable merchandise of foreign growth or manufacture cannot be brought into the United States by sea in any vessel of less than 30 net reg. tons, except into districts adjoining Canada or Mexico.

Manifest, Contents, and Form—Copy for Auditor.—Every vessel with merchandise from a foreign port must have on board a full manifest of the cargo in writing, signed by the master, and specifying the vessel's lading, the port or ports where the cargo was shipped, the different ports to which it is consigned or intended to be entered, the names of the consignees, the names of the passengers on board, their baggage, and the remaining ship's stores. Any form of manifest in substantial compliance with these requirements will be accepted, and it may be in English or in the language of the nation to which the vessel belongs. If in a foreign language, the agent must furnish a translation. If the cargo is to be delivered in different ports, the portions so destined must be stated in successive order in the manifest. Each master of a vessel from a foreign port must immediately upon landing, and before entering his vessel at the Custom House, mail to the Auditor for the Treasury Department, Washington, a true copy of the manifest of his vessel, and on entering his vessel must make affidavit that he has mailed such a copy, and that the same is true and correct; and he must also mail to the Auditor a true copy of the corrected manifest filed on any post entry of his vessel, and make affidavit to such mailing. This regulation does not apply to any port where there is a naval officer.

Discrimination against American Vessels.—Whenever any foreign nation prohibits the importation in vessels of the United States of any merchandise except the produce or manufacture of the United States, vessels of such foreign nation shall, unless otherwise provided by treaty, with their cargoes, be subject to forfeiture for bringing into a port of the United States merchandise which is not the produce or manufacture of the country to which such vessels belong.

Post Entry.—Should any merchandise be found on board any vessel which is not included in her manifest, the master may be fined an amount equal to the value of the merchandise not manifested, and the same may be forfeited. Should, however, it appear to the principal Customs officers at the port that no part of the cargo has been unladen, except as accounted

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for in the master's report, and that the errors and omissions in the manifest were made without fraud or collusion, the master may be allowed to correct his manifest by means of a post entry.

Production of Manifest for Inspection.—Certification.—The master of every vessel bound to a port of the United States must, on arrival within 4 leagues of the coast, or within the limits of any collection district in which the cargo or any part thereof is intended to be unladen, produce the manifest for inspection to any officer of the Customs who may first come on board the vessel, and deliver to him a copy thereof, subscribed by him for each port at which merchandise is to be unladen. The officer, after the requisite examination and comparison of the original and copy, shall certify on the original to its production and on the copy to the fact of its agreement with the original, and shall forthwith transmit a copy to the collector of each district to which the merchandise may be consigned.

Manifest of Cargo from Foreign Port.

Report and manifest of the cargo laden on board of the _____, of _____, whereof _____ is master, and which is of the capacity of _____ tons, built at _____; [and if the vessel be American, in the State of _____, and owned by _____, of _____; as per register granted at _____, the _____ day of _____] and bound for _____; which cargo was taken on board at _____:

Marks.	No. Inclusive.	Packages and Contents.	By whom shipped.	To whom consigned, or if to order.	Place of Consignee's Residence.	Ports of Destination.

Returned cargo : _____.

Names of passengers, and description and number of packages of baggage belonging to them, respectively : _____.

Vessel and cabin stores : _____.

_____, Master.

Certificate of Boarding Officer, endorsed on Original Manifest.

I, _____, certify that the within manifest was this day produced to me as an original manifest of the cargo on board the _____, whereof _____ is master, from _____.

In witness whereof I have hereunto signed my name, this _____, day of _____, 19—.

Certificate of Boarding Officer endorsed on Copies of Manifest.

I, _____, certify that I have examined the within manifest produced to me this day as a copy of the original manifest of the cargo on board of the _____, whereof _____ is master, from _____, with the original, and find the same to agree.

In witness whereof I have hereunto signed my name, this _____ day _____, 19—.

Failure to Deliver or to Certify.—The officer first boarding the vessel who neglects or refuses to endorse the prescribed certificates upon the manifest shall forfeit and pay 500 dols. If the master of the vessel fails to comply with the foregoing requirements, the officer will make a report of such fact to the collector.

Record of Arrival and Entry of Vessels.—An immediate record shall

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be made and kept open to public inspection in every Custom House of the dates of arrival and entry of all vessels.

Report of Master—Entry of Vessel.—The master of any vessel, neglecting or omitting to report the arrival, or to make entry of his vessel within 48 hours of arrival, shall forfeit and pay for each offence the sum of 1,000 dols. Any person bringing in a derelict vessel may take master's oath, even if an alien. No vessel shall be admitted to entry until the master, owner, or agent shall produce a certificate from the health officer or quarantine officer at the port of entry that no person affected with leprosy was on board the said vessel when admitted to free pratique.

Report of Distilled Spirits or Wines.—The master of any vessel having on board distilled spirits or wines is also required, within 48 hours after his arrival, whether at the first port of arrival or not, to report in writing to the surveyor the foreign port or place from which he last sailed; the name, burden, denomination of the vessel; his own name; to what nation the vessel belongs; the quantity and kind of spirits and wines on board, and the number of packages containing the same, with their marks and numbers; and the quantity and kinds of spirits and wines on board as sea stores, under penalty of a fine of 500 dols. and the forfeiture of the merchandise so omitted.

Sea Stores.—A list of sea stores must be presented with the manifest. If any other or greater quantity of articles be found on board as sea stores than are specified in such list of sea stores, or if any of the articles are landed without a permit first obtained from the collector and naval officer (if any) for that purpose, all such articles omitted from said list or manifest or so landed shall be forfeited and may be seized; and the master shall be liable to a penalty treble the value of the articles so omitted or landed. Surplus sea stores cannot be transferred to another vessel.

Deposit of Papers of Foreign Vessels.—The master of every foreign vessel is required, at the time of entry, to produce to the collector the register or other document in lieu thereof, together with the clearance and other papers granted by the officers of the Customs to his vessel at the port of departure for the United States, and, within 48 hours after entry, to deposit the same with the consul or vice-consul of the nation to which the vessel belongs, and to deliver to the collector the certificate of that officer that the papers have been so deposited. For failure to comply with this regulation the master of the vessel so offending is subject to a fine of not less than 500 dols. nor more than 2,000 dols. This regulation does not apply to vessels of foreign nations in whose ports consuls of the United States are not permitted to have the custody of the papers of vessels of the United States. The papers thus lodged with the consul shall not be returned to the master of the vessel until the production by him to the consul of a clearance from the collector of the port where the vessel has been entered, and any consul offending against this regulation is subject to a fine of not less than 500 dols. nor more than 5,000 dols.

Departure without Entry of Vessel.—If a vessel, arriving from a foreign port within the limits of a collection district, shall depart or attempt to depart, unless to proceed to a more interior district to which she may be bound, before report or entry shall have been made, the master will be liable to pay the sum of 400 dols.; and the collector, surveyor, naval officer, or the commander of any revenue cutter is authorized to arrest and bring

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back such vessel to the most convenient port. This penalty will not be incurred if it shall be made to appear to the satisfaction of the collector, or of the court, that such departure was occasioned by stress of weather, pursuit or duress of enemies, or other necessity. These provisions apply to foreign as well as American vessels, but do not extend to a vessel arriving from a foreign port and passing through the conterminous waters of a river which forms the boundary between the United States and foreign territory, for the purpose of proceeding thereto.

Merchandise for other Districts—Bond.—If merchandise be brought into the United States in a vessel from a foreign port, and specified in the manifest at the first port of arrival as destined for other districts in the United States, the importing vessel may proceed with the same from district to district in order to the landing or delivery thereof, the duties on such goods only as are landed or delivered in any district to be paid or secured in such district. But before such vessel shall so depart, if the departure be not within 48 hours after arrival, the master is required to obtain from the collector a certified copy of the report and manifest filed on entry to which must be attached a certificate, showing the quantity and particulars of the goods landed within his district, or of the goods remaining on board upon which duties are to be paid or secured in some other district, and also obtain a permit to proceed to the other district to finish unloading.

The master of such vessel is required to give bond to the collector of the district within which the vessel shall first arrive, in a sum equal to the amount of the duties on the residue of the cargo, conditioned upon the production of evidence of the lawful landing of the same. The said bond shall be cancelled within 6 months from the date thereof, on the production of certificates from the collectors of the district into which the goods shall have been imported, testifying the due entry and delivery of the goods in such districts; or upon proof, to the satisfaction of the collector by whom the bond shall have been taken, and of the naval officer of such port, if any, that such entry and delivery were prevented by some unavoidable accident, and if the whole or any part of the goods shall not have been lost, that the same have been duly entered and delivered within the United States. A copy of that portion of the vessel's manifest covering the merchandise landed must be furnished the collector at each port, and a copy thereof mailed by the master to the Auditor for the Treasury.

Copy of Report—Certificate of Landing.—Within 24 hours after the arrival of the vessel in another district, the master is required to report to the collector of such district, exhibiting the certified copy of his first report, together with a certificate as aforesaid from the collector of each district within which any of the merchandise brought in such vessel shall have been landed, stating the quantity and particulars thereof. The report and certificate shall be filed at the port of final discharge of the vessel.

Penalty, Enrolment, and License.—A penalty of 500 dols. is imposed on the master of such vessel for failure to obtain a copy of his report made on entry from the collector at the port of departure, or any certificate he is thus required to obtain, or to exhibit the same to the collector of any other district, to which the vessel may afterwards proceed, within 24 hours after arrival. Enrolment and license must not be granted to a vessel having on board merchandise brought in her from a foreign port, and not unladen in the United States.

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Discharge of Ballast.—The master of a vessel bringing ballast of no mercantile value may obtain a permit to discharge the same on his declaration that same is of no value. The following permit will then be issued :—

Permit to unlade Ballast of no Mercantile Value.

PORT OF _____,
_____, _____.

To the Inspectors :

You will allow to be unladen from the _____, from _____, the ballast, consisting of _____, if, upon your examination thereof, you find it to be of no appreciable mercantile value, and report the same upon your return. If you find it to be of appreciable mercantile value, you will endorse the fact upon this permit, and return it to the collector for further orders.

Deputy Collector.

Deputy Naval Officer.

Vessels in Distress.—If a vessel from a foreign port is compelled by stress of weather or other necessity to put into any other port than that of her destination, the master, together with the person next in command, within 24 hours after arrival, must make protest in the usual form, upon oath before a duly authorized person, setting forth the causes or circumstances of such necessity. This protest, if not made before the collector, must be produced to him and the naval officer, and a copy thereof lodged with him. The master of such vessel must make report to the collector within 48 hours after arrival, and if it appear to the collector by the certificate of the port wardens, or if there be no such officers, by the certificate of two reputable merchants, to be named by the collector that it is necessary to unlade the vessel, the collector and naval officer will grant a permit and detail an inspector to supervise the unlading; and the merchandise so unladen will be stored under custody of the collector.

At the request of the master of the vessel, or of the owner thereof, the collector and the naval officer will grant permission to enter and pay the duties on, and dispose of, such part of the cargo as may be of a perishable nature, or as may be necessary to defray the expenses of attending the vessel. And if the delivery of the cargo do not agree with the master's report, and the difference be not satisfactorily explained, the master will become subject to the penalties provided in the case of ordinary importations.

The cargo, or the residue thereof, may be reladen on board the vessel, under the inspection of an officer, and the vessel may proceed with the same to her destination, subject only to the charge for storing and safe-keeping of the merchandise and the fees for entrance and clearance.

Cargo of Vessel prevented from reaching Destination.—When a vessel is prevented by ice from reaching her port of destination, the collector of the district where such vessel may arrive may receive the master's report and entry, and, with the consent of the naval officer, may grant permit for the delivery of the cargo at such place in his district as he may deem proper; but all regulations, restrictions, penalties, and provisions are as applicable to this case as if the unlading and delivery took place at the port of destination.

In case a vessel is prevented from reaching her port of destination by shallow water or other obstructions, or by reason of marine casualty, application should be made, through the collector, to the Secretary of the Treasury for permission to discharge the cargo at a convenient port, to be forwarded to its port of destination. On receipt of such permission, the cargo may

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be so forwarded, accompanied with manifests showing the part of the cargo so conveyed by other means of transport, duly certified by the officer who superintended its transshipment.

Cargo of Wrecked Vessels.—When vessels are wrecked in the waters of the United States, application should be made to the Secretary of the Treasury by the original owners or consignees of the cargo, or by the underwriters, in cases of abandonment to them, for permission to forward the goods saved from the wreck to the ports of destination in other conveyances, without entry at the Custom House in the district in which the merchandise was cast ashore or unladen. On receipt of such permission the merchandise may be so forwarded, with particular manifests thereof, duly certified by the Customs officer in charge of the goods.

Discharge before Arrival at Destination.—If, after the arrival of any vessel, bound to the United States from a foreign port, within the limits of any collection district of the United States, or within 4 leagues of the coast thereof, any part of the cargo of such vessel shall be unladen before her arrival at her port of destination and without authority from the proper officers of the Customs, the master of such vessel and the person next in command shall respectively pay the sum of 1,000 dols. for each offence; and the merchandise so unladen, except in the case of the accident, necessity, or stress of weather, shall be forfeited. When such unloading occurs from these unavoidable causes and the master, with two or more of the officers and mariners of the vessel, shall make oath of the facts before the collector of the district within which the casualty occurred, or before the collector of the first district at which such vessel shall afterwards arrive, if the casualty occurred within 4 leagues of the coast and without the limits of any collection district, the penalty will not be incurred.

Transfer to another Vessel.—If the merchandise so unladen be transferred to any other vessel, except in the case of accident, necessity, or stress of weather, to be proved as above required, the master in charge of the receiving vessel, and every other person aiding and assisting, shall forfeit and pay treble the value of said merchandise, and the vessel shall also be forfeited.

Unlading at Night.—Merchandise brought in a vessel from a foreign port cannot be unladen or delivered from such vessel but in open day except by special permission from the collector and naval officer, if any; and upon the issuing of a general order and the execution of a sufficient bond, conditioned to indemnify him for all losses and liabilities which may be occasioned by reason of the granting of such permit, the collector and naval officer, if any, shall grant a special permit to unlade or lade at night to any steamship or other conveyance from a foreign port or place, or to a steamship or other conveyance from another port in the United States belonging to a line in the United States designated by the Secretary of the Treasury as a common carrier of bonded merchandise. This is inapplicable to purely domestic cargoes, not involving the question of duties. It applies, however, to the lading of merchandise intended for exportation, with benefit of drawback, arriving at a port from another port in the United States in a steamship or other conveyance belonging to a line designated as a common carrier of merchandise in bond. If any merchandise shall be unladen or delivered from any vessel contrary to the Revised Statutes, the master of such vessel, and every other person who shall knowingly be concerned, or aiding therein,

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or in removing, storing, or otherwise securing such merchandise, shall each be liable to a penalty of 400 dols. for each offence, and shall be disabled from holding any office of trust or profit under the United States, for a term not exceeding 7 years; and the collector of the district shall advertise the name of such person in a newspaper printed in the State in which he resides, within 20 days after each respective conviction.

All merchandise so unladen or delivered contrary to the provisions of the Revised Statutes shall become forfeited, and may be seized by any of the officers of the Customs; and where the value thereof, according to the highest market price of the same at the port or district where landed, shall amount to 400 dols., the vessel, tackle, apparel, and furniture shall be subject to like forfeiture and seizure.

Time for Discharge of Cargo.—When merchandise remains on board a vessel after the expiration of legal time for discharging the same the collector may take possession thereof.

The legal time allowed is as follows:—

Vessels of less than 500 tons, 10 working days after entry.

Vessels of 500 tons and less than 1,000 tons, 15 working days after entry.

Vessels of 1,000 tons and less than 1,500 tons, 20 working days after entry.

Vessels of 1,500 tons and upwards, 25 working days after entry.

The working days of a vessel are to be computed by excluding the date of entry, legal holidays, and stormy days, when discharge is impracticable with safety to cargo.

All merchandise found on board at the expiration of these periods, not reported for transshipment to some other district or some foreign port or place, must be taken possession of by the collector. But, with the consent of the owner or consignee, or of the owner or master of the vessel, such merchandise may be taken possession of after one day's notice to the collector of such consent. One working day must intervene between the giving of the notice and the obtaining of the order to discharge. The limitation of time for unlading prescribed by the preceding section shall not extend to vessels laden exclusively with coal, salt, sugar, hides, dyewoods, wool, or jute butts, consigned to one consignee, arriving at a port for orders; but if the master of any such vessel requires a longer time to discharge her cargo, the wages or compensation of the inspector, for every day's attendance exceeding the number of days allowed by law, shall be paid by the master or owner; and thereupon the collector is hereby authorized and required to allow such longer time, not exceeding 15 days.

Immediate Delivery.—When it shall appear by the bill of lading that any portion of a cargo is deliverable immediately after the entry of the vessel, the collector may at once take possession of such merchandise and deposit the same in a general order warehouse, but if it does not so appear by the bills of lading, on request of the master or consignee of any vessel and one day's notice, the collector may take like possession of the merchandise on board any vessel arriving in his district. In case the vessel be laden with salt, coal, and similar bulky articles, the collector may grant an extension of time, upon a deposit with him by the master or owner of the vessel of a sum equal to the wages of the inspector in charge for each day's service in excess of the limitation; and if, by reason of the delivery of the cargo in other districts, the limitation is exceeded, the compensation of the inspector

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in charge is to be paid for every day's excess ; and before clearance shall be granted to such vessel the inspector must render an account in duplicate of the amount due for overtime, one copy to be delivered to the consignee or master of the vessel and the other to the collector.

The master of a vessel laden exclusively either with sugar, coal, salt, hides, dyewoods, wool, or jute butts, consigned to one consignee, arriving at a port for orders, may be permitted to destine such cargo or determine its disposition "for orders," upon entering the vessel at the Custom House, and, within 15 days afterwards and before the unloading of any part of the cargo, to amend the manifest by designating the actual port of discharge of such cargo. In the event of failure to designate the port of discharge within 15 days such cargo must be discharged at the port where the vessel entered.

Special Unlading.—The master of any steamship, trading between foreign ports and ports in the United States, and running in a regularly established steamship line, which line shall have been in existence and running steamers in the foreign trade for not less than one year previous to the application of the privilege extended by this act, arriving in a port of entry may make preliminary entry of the vessel by making oath or affirmation to the truth of the statements contained in his manifest and delivering said manifest to the Customs officer, who shall board said vessel, whereupon the unlading of such vessel may proceed upon arrival at the wharf, under the special regulations governing such cases. Customs officers acting as boarding officers, and any Customs officer, who may be designated for that purpose by the collector of the port, are authorized to administer the oath or affirmation herein provided for.

Foreign Clearances : Outward Manifest—Consular Fees.—Before a clearance shall be granted to any vessel bound to a foreign port, it must be shown by the discharging officer's return that all the cargo imported in the vessel has been duly discharged and accounted for, and the master shall file with the collector an outward manifest, in the prescribed form under oath, of all the cargo laden on board, which must agree with the manifests filed by the several shippers ; for failure to file such outward manifest the master shall be liable to a penalty of 500 dols. The clearance granted by a collector for a vessel and her cargo need not specify the particulars thereof, unless required by the master or other person in charge, or command of the vessel.

Shippers' Manifests.—Before a clearance for a foreign port or for a port in non-contiguous territory belonging to the United States shall be granted by the collector, the owners, the shippers, or consignors of the cargo shall deliver to the collector manifests of the portions thereof shipped by them respectively, and verify the same on oath before the collector. Such manifests must specify the kinds, quantities, value, and destination of the merchandise as provided for in the regulations. Supplementary manifests for statistical purposes may be filed under oath of owner or agent of vessel within four business days after the clearance of the vessel, but such filing will not affect any fine incurred by failure to observe the law.

Crew List—Action on Crew List.—Before the clearance of a vessel of the United States bound on a foreign voyage, or about to engage in the whale fishery, the master must file under oath a list of the names, places of birth and residence, and a description of the persons who compose his

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crew ; and the collector shall deliver to him a certified copy of such list, without erasure or interlineation. The master of every vessel bound on a foreign voyage or engaged in the whale fishery shall exhibit the certified copy of the list of the crew to the first boarding officer at the first port in the United States at which he shall arrive on his return, and also produce the persons named therein to the boarding officer, whose duty it shall be to examine the men with such list and to report the same to the collector ; and it shall be the duty of the collector at the port of arrival, where the same is different from the port from which the vessel originally sailed, to transmit a copy of the list so reported to him to the collector of the port from which such vessel originally sailed.

Shipping Articles—Bills of Health, etc.—The master of every vessel of the United States bound to a foreign port, or of any such vessel of the burden of 75 tons or upwards, bound from a port on the Atlantic to a port on the Pacific, or vice versa, shall, before a clearance can be granted, obtain the certificate of a collector to a duplicate of the shipping articles. But this shall not be required of a vessel where the seamen are by agreement entitled to share in the profits of a voyage, or of the master of a coastwise or lake-going vessel that touches at foreign ports, or is engaged in trade between the United States and British North America, or the West Indies or Mexico. Masters of such vessels, although not required to enter into agreements with their seamen before a U.S. shipping commissioner unless they so desire, shall, however, before clearance, obtain from the collector a certified copy of the shipping articles, containing the names of the crew, to be written in a uniform hand, without erasures or interlineations.

Bills of health and a certified copy of the outward manifest, when required by the master of a vessel bound on a foreign voyage, will be furnished by the collector.

Inspection under State Laws.—The master of a vessel having on board goods liable to inspection under the State laws must produce, before a clearance is granted, if required by such laws, the certificate of inspection and the receipts for the payment of legal fees.

United States Securities.—A vessel of the United States, bound from a port in the United States to a foreign port, or vice versa, is required, before clearance, to receive on board all coin, bullion, United States notes, bonds, and other securities which any official representative of the Government of the United States at home or abroad shall offer, and promptly deliver the same to the proper officer or consignee, on arrival at the port of destination, for which service a reasonable compensation shall be paid.

Mail Matter.—A master bound for a foreign port must make oath that he will not receive nor convey any letters or other packets which have not been regularly posted and received from the Post Office at the port of departure, except letters or letter packets relating to the cargo and addressed to the owner or consignee of the vessel, and letters or letter packets enclosed in United States stamped envelopes of sufficient denomination to cover the postage. It is the duty of the collector or other officer to require from the master, as a condition of clearance, an oath or affirmation that he has not under his care, or within his control, and will not receive or convey any letters or letter packets in violation of this permission.

Return of Ship's Papers.—Upon compliance with these requirements respecting clearance, the collector will deliver to the master the clearance,

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and as regards vessels of the United States, the vessel's register and other papers.

Inflammable or Explosive Materials.—No loose hay, loose cotton, or loose hemp, camphene, nitro-glycerine, naphtha, benzine, benzole, coal-oil, crude or refined petroleum, or other like explosive burning fluids or like dangerous articles shall be carried as freight or used as stores on any steamer carrying passengers; nor shall baled cotton or hemp be carried on such steamers unless the bales are compactly pressed and thoroughly covered and secured, as prescribed by the steamboat regulations; nor shall gunpowder be carried on any such vessel except under special license; nor shall oil of vitriol, nitric, or other chemical acids be carried on such steamers except on the decks or guards thereof or in such other safe part of the vessel as shall be prescribed by the inspectors. Refined petroleum which will not ignite at a temperature of less than 110° F. thermometer may be carried on board such steamers upon routes where there is no other practicable mode of transporting it and under such regulations as shall be prescribed by the board of supervising inspectors with the approval of the Secretary of Commerce and Labour; and oil or spirits of turpentine may be carried on such steamers when put up in good metallic vessels or casks or barrels well and securely bound with iron and stowed in a secure part of the vessel; and friction matches may be carried on such steamers when securely packed in strong tight chests or boxes, the covers of which shall be well secured by locks, screws, or other reliable fastenings, and stowed in a safe part of the vessel at a secure distance from any fire or heat. All such other provisions shall be made on every steamer carrying passengers or freight to guard against and extinguish fire as shall be prescribed by the board of supervising inspectors and approved by the Secretary of Commerce and Labour.

Gasoline, etc., for Motor Vehicles.—Steam vessels may transport gasoline or any of the products of petroleum when carried by motor vehicles (commonly known as automobiles) using the same as a source of motive power: *Provided, however,* That all fire in such vehicles or automobiles be extinguished immediately after entering the said vessel, and that the same be not relighted until immediately before said vehicle shall leave the vessel: *Provided further,* That any owner, master, agent, or other person having charge of passenger steam vessels shall have the right to refuse to transport automobile vehicles the tanks of which contain gasoline, naphtha, or other dangerous burning fluids. Vessels not carrying passengers for hire may carry gasoline or any petroleum product to supply power to their motor boats or launches.

Tonnage Tax : Vessels Subject to Tonnage Duty—Computation.—There shall be collected from every vessel arriving at a port of the United States from any place in North America, Central America, the West Indies, the South American coast of the Caribbean Sea, the Bermudas, the Bahamas, Newfoundland, Norway and Sweden a tonnage duty of 3 c. per ton; and from every vessel arriving from foreign places other than those above specified, not exempted by proclamation, a duty of 6 c. per ton; tonnage duty shall not be collected from any vessel more than five times in any one year at these rates, and if any vessel shall become liable to both rates, not more than 30 c. per ton shall be collected in any one year. The tonnage year is to be computed from the date of the first payment, and expires on

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the day previous to the corresponding date of the following year. Tonnage duty will be suspended, in whole or in part, whenever the President, by proclamation, shall so direct.

Certificate of Payment.—A certificate will be issued by collectors to every master showing the date and number of each and every payment made by him during the tonnage year, which will constitute the official evidence of such payments. In the absence of such certificate, evidence of payment of tonnage duty must be obtained from the Commissioner of Navigation, to whom appeals for refund must be addressed.

The following table is intended to show the rates of tonnage duty to which the several classes of vessels are liable :—

Classes of Vessels.	Under what Law.	Rate per Ton.
Vessels of the United States—		
1. Whose officers are citizens.	Act of June 19, 1886, § 11	Dols. ·03 or ·06
2. Any of whose officers are not citizens	R. S., 4219	·50
Vessels not of the United States—		
1. Not built in the United States, but belonging to citizens thereof, and provided with sea letters or other Custom House documents proving the vessels to be American property. And, in addition, if the owner or master refuses to take the oath required by sec.4, 226, R. S.	<div> <div> R. S., 4219 Act of June 19, 1886, § 11 </div> <div> R. S., 4225, "light money" </div> </div>	<div> ·50 ·03 or ·06 </div> ·50
2. Vessels not of the United States	(When under treaty and proclamation, the same as vessels of the United States)	·03 or ·06
3. Belonging wholly or in part to subjects of foreign powers, and not having privileges under treaties and proclamations—	<div> Act of June 19, 1886, § 11 R. S., 4219 R. S., 4225, "light money" </div>	·03 or ·06 ·30 ·50
(a) Built in the United States	<div> R. S., 4219 Act of June 19, 1886, § 11 R. S., 4225, "light money" </div>	·50 ·03 or ·06 ·50
(b) Not built in the United States	<div> R. S., 4219 Act of June 19, 1886, § 11 R. S., 4225, "light money" </div>	·50 ·03 or ·06 ·50
(c) Wherever built, which enter from a foreign port or place where vessels of the United States are not ordinarily permitted to enter and trade (to be collected on each entry from such port or place)	<div> R. S., 4219 Act of June 19, 1886, § 11 R. S., 4225, "light money" </div>	2·00 ·03 or ·06 ·50
4. Without documents—		
(a) Built in the United States (the same as vessels of class 3a)	<div> Act of June 19, 1886, § 11 R. S., 4219 R. S., 4225, "light money" </div>	·03 or ·06 ·30 ·50
(b) Not built in the United States (the same as vessels of class 3b)	<div> R. S., 4219 Act of June 19, 1886, § 11 R. S., 4225, "light money" </div>	·50 ·03 or ·06 ·50

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Special Exemptions.—Vessels of war and vessels employed by any foreign nation as public packets for the conveyance of letters and dispatches, and vessels of the United States in the coastwise trade or exclusively engaged in the whale or other fisheries, and pleasure yachts belonging to a foreign yacht club, and documented yachts of the United States, and vessels in distress entered at a port other than that of destination, and vessels not engaged in trade, are exempt from the payment of tonnage duty.

Port Exemptions—Intermediate Ports.—Certain vessels from the following ports are exempted, under Executive proclamations, from the payment of tonnage duty :—

Ports of Colon and Panama ; Ontario ; Island of Montserrat, W. I. ; Greytown, Nicaragua ; Copenhagen ; Bocas del Toro, U. S. C. ; all ports in Europe of the Kingdom of Netherlands, and free ports in Dutch East Indies ; Island of Guadeloupe and Grenada, W. I. British yachts must enter and clear and pay tonnage dues.

The fact that a vessel touches at an intermediate port at which it neither enters nor clears nor takes on board or discharges passengers or cargo, and which touching is merely an incident in the voyage, will not deprive such vessel of the rights derived from sailing from a free port, such being its port of departure. In the absence of better evidence the affidavit of the master may be accepted to show the facts.

Pilotage—Federal Pilot.—The master of a foreign vessel is not required to employ a pilot licensed under the laws of the United States.

State Laws.—The piloting of vessels in State waters, except steam vessels employed in the coasting trade, is regulated by the laws of the respective States in which such waters are situated. But no regulation or provision can be adopted by any State making a discrimination in the rate of pilotage or half pilotage as to vessels sailing between the ports of one State and vessels sailing between the ports of different States, or any discrimination against steam vessels ; nor can a State or a municipal government require pilots of the United States to procure a State or other license in addition to that issued by the United States, or to comply with any other regulation that may impede the performance of their duties.

But a State may require vessels, except steam vessels in the coastwise trade, entering or leaving ports therein to take on a pilot duly authorized or licensed to act as such under the laws thereof.

Interstate Pilots.—The master of a vessel, except steam vessels in the coasting trade, entering or departing from a port on waters forming the boundary between two States, may employ a pilot, duly authorized or licensed by the laws of either of the States bounded by such waters, to pilot such vessel.

The pilot laws have reference to the merchant service, and do not extend to public vessels of the United States entering or departing from a port.

Customs Fees.—(Under jurisdiction of Treasury Department.) The following fees are to be collected from the private parties concerned at all ports except those on the northern, north-eastern, and north-western frontiers :—

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Fee No.	Nature of Fee.	Amount.
		Dols. c.
1	Post entry on manifest	2 00
2	Certificate of weight issued on demand of importer	0 20
3	Special certificate under seal, of payment of duties, demanded by importer	0 20
4	Certified copy of, or extract from, an invoice or bill of lading or other document, for use of importer and not of Customs service	0 20
5	Certificate of export requested by exporter for his own use	0 20
6	Permit to lade after sunset	0 20
7	Permit to take on ballast, cargo, or coal while unloading	0 20
8	Permit to take on coal before entry	0 20
9	Permit to retain foreign cargo on board destined for foreign ports . . .	0 20
10	Bond taken in case of vessel proceeding to a foreign port to discharge foreign cargo, manifested as destined therefor, if same be of dutiable character	0 40
11	Bond to unlade vessel from foreign ports after sunset	0 40
12	Bond to unlade under preliminary permit (Act of June 5, 1894). . . .	0 40
13	Bond of claimant of seized goods for costs of court	0 40
14	Customs bonds, permits, and certificates taken officially not connected with the entry of imported goods and the passing thereof through the Customs, or of domestic goods exported. This number must not be used for a document enumerated above, and the document must be fully described, giving the article in the Customs Regulations or Treasury Decisions under which taken.	
	Bond (describe fully, giving article in Customs Regulations). . . .	0 40
	Certificate (describe fully, giving article in Customs Regulations) . .	0 20
	Permit (describe fully, giving article in Customs Regulations) . . .	0 20
15	The actual expense incurred in weighing, gauging, or measuring imports will be collected in all cases where the invoice or entry shall not contain the weight, quantity, or measure of the merchandise weighed, gauged, or measured, and whenever the weighing, gauging, or measuring shall disclose a difference between the actual weight or quantity and that specified in the invoice or entry, affording a well-grounded presumption of fraud, the collector will advise with the district attorney of the United States in regard to the case, and will be governed by his opinion as to the propriety of instituting legal proceedings for enforcing the penalty provided by law. (No part of emoluments.)	
16	The actual expense incurred in weighing, gauging, or measuring goods drawn from warehouse in quantities less than the entire importation is to be paid by the importer. (No part of emoluments.)	
17	Cording and sealing merchandise in bond for transportation across the United States.	

AT ALL PORTS AND PLACES ON THE NORTHERN, NORTH-EASTERN, AND NORTH-WESTERN FRONTIERS.

Fees to be collected from private parties.

(Under the jurisdiction of the Treasury Department.)

Fee No.	Nature of Fee.	Amount.
		Dols. c.
1	Post entry on manifest	2 00
2	Certificate of weight issued on demand of importer	0 20
3	Special certificate under seal, of payment of duties, demanded by importer	0 20
4	Certified copy of, or extract from, an invoice or bill of lading or other document for use of importer and not of Customs service	0 20
5	Certificate of export requested by exporter for his own use	0 20
6	Permit to take on ballast, cargo, or coal while unloading	0 20
7	Permit to take on coal before entrance	0 20
8	Permit to retain foreign cargo on board destined for foreign ports . . .	0 20
9	Permit to lade after sunset	0 20
10	Bond to unlade vessel from foreign ports after sunset	0 50
11	Bond to unlade under preliminary permit (Act of June 5, 1894). . . .	0 50
12	Bond of claimant of seized goods for costs of court	0 50

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AT ALL PORTS AND PLACES ON THE NORTHERN, NORTH-EASTERN, AND NORTH-WESTERN FRONTIERS.

Fees to be collected from private parties.

(Under the jurisdiction of the Treasury Department.)

Fee No.	Nature of Fee.	Amount.	
		Dols.	c.
13	Bond taken in case of vessel proceeding to a foreign port to discharge foreign cargo, manifested as destined therefor, if same be of dutiable character	0	40
14	Customs bonds, permits, and certificates taken officially not connected with the entry of imported goods and the passing thereof through the customs or of domestic goods exported. This number must not be used if document is enumerated above, and document must be fully described giving the article in the Customs Regulations or Treasury Decision under which taken.		
	Bond (describe fully, giving article in Customs Regulations) . . .	0	50
	Certificate (describe fully, giving article in Customs Regulations) . .	0	20
	Permit (describe fully, giving article in Customs Regulations) . . .	0	20
15	The actual expense incurred in weighing, gauging, or measuring imports will be collected in all cases where the invoice or entry shall not contain the weight, quantity, or measure of the merchandise weighed, gauged, or measured, and whenever the weighing, gauging, or measuring shall disclose a difference between the actual weight or quantity and that specified in the invoice or entry, affording a well-grounded presumption of fraud, the collector will advise with the district attorney of the United States in regard to the case, and will be governed by his opinion as to the propriety of instituting legal proceedings for enforcing the penalty provided by law. (No part of emoluments.)		
16	The actual expense incurred in weighing, gauging, or measuring goods drawn from warehouse in quantities less than the entire importation is to be paid by the importer. (No part of emoluments.)		
17	Cording and sealing merchandise in bond for transportation across the United States.		

Alien Officers.—There shall be collected from every vessel of the United States of which, during a foreign voyage or a voyage between Atlantic and Pacific ports, an alien shall be an officer, a duty of 50 c. per ton, unless such alien shall have supplied a vacancy occurring during the voyage in any place below the rank of master; but such alien shall not act as officer after the return of the vessel to her home port. In all such cases the collector will report the facts to the Commissioner of Navigation for instructions before imposing the duty.

ALEXANDRIA.

Alexandria, in lat. 38°48' N., long. 77°2' W., is situated on the Potomac River, about 6 miles below Washington.

Population.—About 16,000.

Accommodation.—Vessels of 20 ft. draught can safely go to this port. There is a depth of from 18 to 20 ft. water alongside the wharves. There is a depth of water in the channel of 27 ft. The wharf frontage is over 1 mile in length and the river at this point is 1 mile wide. Rise and fall of tide, 3½ ft. in 12 hours. The bottom is soft, no rocks. There are a number of tug-steamers. Alexandria is the terminus of three railway lines from the interior.

Pilotage.—Not compulsory. Rates according to agreement.

Fresh river water can be obtained.

Custom House charges same as other United States ports.

The United States.

ANNAPOLIS.

Annapolis, in lat. $38^{\circ}57'$ N., long. $76^{\circ}29'$ W., is situated on the Severn, about 2 miles from its mouth, and about 28 miles S.S.E. of Baltimore.

Accommodation.—Vessels drawing 20 ft. can anchor in the river, and those of 12 ft. draught can lie alongside the wharves. Tides rise 1 foot. This is a port of entry.

APALACHICOLA.

Apalachicola, in lat. $29^{\circ}44'$ N., long. $85^{\circ}6'$ W., is situated at the mouth of the river of the same name.

Population.—3,100.

Exports.—Hewn and sawn timber.

Accommodation.—Vessels of $12\frac{1}{2}$ ft. draught can cross the inner bar at low water, and proceed as far as the lower anchorage, about 6 miles from the town, while those of 11 ft. draught can reach the upper anchorage, about 2 miles from town. At high water there is $13\frac{1}{2}$ ft. on the bar.

The wharves of the town can only be approached by vessels of 11 ft. draught.

The U.S. Government dredge is now at work, cleaning out and excavating the bar at mouth of river, which is 1 to $1\frac{1}{2}$ miles from town, and has a channel 100 ft. wide and of 11 ft. draught, to the wharves of the town.

The East Pass entrance has a draught of 18 ft. at mean low tide (rise of tide, $1\frac{1}{2}$ ft.), and has two anchorages, one being Dog Island Cove at W. end of Dog Island, and the other the old cotton loading ground. The former has a depth of 20 ft., the latter of 21 ft. The Pass is about 25 miles from the town, and has a bar at "bulk head" with 9 ft. of water. The anchorage of either Pass is well sheltered; the bottom is blue clay.

Pilotage.—Compulsory. In and out—Vessels drawing under 6 ft., 2 dols.; 6 to 10 ft., 3 dols.; 10 to 14 ft., 4 dols.; 14 to 20 ft., 5 dols. Pilots can be obtained at the East Pass.

Port Charges.—Tonnage Dues.—See the **United States.** **Moor-ing**:—10 dols. per vessel. **Towage**:—Across bar, about 40 dols.; shifting, 10 dols.; towage out, about 10 c. per 1,000 ft. of cargo. **Ballast**:—40 c. per ton. **Labour**:—From 90 c. to 1 dol. per 1,000 on all lumber. **Water**:—1 c. per gallon from boat. **Provisions**:—Fresh beef, $12\frac{1}{2}$ c. per lb.

ASTORIA.

Astoria is in lat. $46^{\circ}12'$ N., long. $123^{\circ}48'$ W.

Population.—15,000.

Imports.—Coal, cement, salt, pig-iron, and fire bricks.

Exports.—Lumber, wood pulp, salmon, and wheat.

Accommodation.—There is a depth of $25\frac{1}{2}$ ft. at dead low water on the bar of Colombia river; average rise and fall of tides, about $7\frac{1}{2}$ ft.; spring tides, 10 ft. There is sufficient water in the harbour for any vessel that can cross the bar. The anchorage in the upper part is good, but in the lower part indifferent. The total length of wharfage or quayage is about 1,200 ft., with an average depth of 22 ft. at low water.

The United States—Astoria (continued).

Pilotage.—Compulsory, 2 c. per ton and 5 dols. per foot draught. Moving in harbour, 7 dols. 50 c.

Port Charges.—**Mooring** :—40 dols. per vessel. **Wharfage** :—About 15 dols. per day. **Towage** :—From Astoria to Portland and return, vessels from 500 to 700 tons net reg., 500 dols.; from 701 to 1,000 tons, 550 dols.; from 1,001 to 1,200 tons, 600 dols.; from 1,201 to 1,500 tons, 650 dols.; from 1,501 to 1,800 tons, 700 dols.; from 1,801 to 2,000 tons, 750 dols.; from 2,001 to 2,500 tons, 800 dols.; from 2,501 to 3,000 tons, 850 dols. Hawser charges, 15 dols. each way. Vessels towed from sea to Astoria and return only are charged 70 per cent. of the rate to Portland and return. Moving in the harbour, 20 dols. for each steamer used. River pilotage is not required between Astoria and Portland. **Boat Hire** :—4 dols. per day. **Light Dues** :—From 3 c. to 6 c. per net ton. **Labour** :—40 c. to 50 c. per hour. **Docking Vessels** :—20 dols. **Fresh Water** :—2 dols. per thousand gallons. **Stevedore** :—

DISCHARGING.

	Do s. c.		Dols. c.
Ballast, per 2,240 lb. net	0 32½	Window and plate glass, per 2,240 lb. net	0 60
Cement, per 2,240 lb. net	0 32½	Clay, per 2,240 lb. net	0 40
Coal, per 2,240 lb. net	0 37½	Sulphur, per 2,240 lb. net	0 37½
Coal (at Astoria), per 2,240 lb. net	0 40	Angle iron, per 2,240 lb. net	0 75
General merchandise, weight and measurement, per 2,240 lb. net	0 35	Structural iron, beams, blooms and shafting, per 2,240 lb. net	1 15
Pig-iron, per 2,240 lb. net	0 40	Bar iron, per 2,240 lb. net	0 45
Bricks and tiling, per 2,240 lb. net	0 60	Scrap iron, per 2,240 lb. net	0 90
Coke, per 2,240 lb. net	0 70	Boiler plates, medium, per 2,240 lb. net	0 60
Railroad iron, per 2,240 lb. net	0 50	Boiler plates, large, per 2,240 lb. net	0 90
Street car railroad iron, per 2,240 lb. net	0 55		

LOADING.

	Dols. c.		Dols. c.
Wheat, per 2,240 lb. net	0 30	Lumber, timber, and piles rate, at Portland and Astoria, according to specifications and condition of vessel, 1 dol. 10 c. to 1 dol. 50 c.	
Wheat, large sacks, per 2,240 lb. net	0 32½	10 c. per ton extra for discharging cargo on barges, cars, or into hoppers, excepting structural and railroad iron, which is 15 c. per ton; hauling of barges to be charged to vessel or consignee.	
Half sacks flour, per 2,240 lb. net	0 32½		
Quarter sacks flour, per 2,000 lb. net	0 40		
Barley, per 2,000 lb. net	0 30		
Bran and oats, per 2,000 lb. net	0 40		
Salmon, per 2,240 lb. net	0 45		

For overtime or ships' work they are to be reimbursed for their actual extra outlay plus 10 per cent.

Pro Forma Charges on a steamer of 3,000 tons register, ballast in, and cargo of lumber out, drawing 26 ft. loaded :—

	Dols. c.
Light dues at 6 c. per reg. ton	180 00
Brokerage	50 00
Pilotage, in and out, 26 ft. at 5 dols.; 3,000 tons at 2 c.	190 00
Boat hire, while away from wharf attending ship	10 00
Stevedores loading 3,500,000 ft. at 1 dol. 25 c. per m.	4,375 00
Customs fees	8 00
Consular fees	6 15
Pilot shifting vessel into wharf and out.	15 00

4,834 15 = £994 13s. 9d.

The United States.

BALTIMORE.

Baltimore, in lat. $39^{\circ}19' N.$, long. $76^{\circ}37' W.$, stands on the north-western branch of the River Patapsco, about 13 miles from its entrance into Chesapeake Bay, and about 160 miles from the Atlantic.

Population.—553,670.

Imports.—Iron, manganese, pyrites, kainite, sulphur, nitrate of soda, and general merchandise.

Exports.—Steel rails, steel products, tobacco, grain, and general merchandise.

Accommodation.—Vessels of 30 ft. draught can reach Baltimore without lightening at low water. The channels are 600 ft. wide, and have a depth of 30 ft. at low water, and $31\frac{1}{2}$ ft. at high water from the bay to the inner harbour, and there is not less than 19 ft. anywhere in the upper harbour or basin.

The most dangerous winds off the coast of Maryland are those from S. to N. by E., prevailing during the autumn and winter months; and the special danger to shipping bound to Baltimore is on entering Chesapeake Bay, from the shoal called the Middle Ground, lying E.N.E. from Cape Henry, distant about 5 miles, having at low tide but 9 ft. of water on it; however, with proper precaution, and the use of the lead, this danger is easily avoided, as the soundings in the latitude of Cape Henry extend a distance of 60 miles, and gradually shoal towards the land. At night there is a light on Cape Henry, which is visible in clear weather, from a ship's deck, at a distance of 18 to 22 miles.

Vessels of any draught of water can ascend Chesapeake Bay as far as Sandy Point, at the mouth of the Patapsco River, about 13 miles from Baltimore. With 30 ft. draught they can pass through the New Ship Channel at any time or tide.

The following are the dimensions of the dry and floating docks:—

New Dock is 628 feet long over all, 80 feet wide at the entrance, and 23 feet on the sill.

Columbian Dock is 505 feet long over all, 80 feet wide at the entrance, and 20 feet on the sill.

Floating Dock is 230 feet long over all, 65 feet wide at the entrance, 12 feet on the sill, and with 2,000 tons lifting power.

Floating Dock is 154 feet long over all, 60 feet wide at the entrance, 10 feet on the sill, and with 700 tons lifting power.

Floating Dock is 141 feet long over all, $44\frac{1}{2}$ feet wide at the entrance, 13 feet on the sill, and with 500 tons lifting power.

There are eight patent slips to raise vessels from 200 to 1,500 tons.

The following are the merchandise wharves:—Baltimore and Ohio R.R. Co. have twelve wharves at Locust Point, and one pier recently completed, 1,200 ft. long. Depth of water alongside, 30 ft. A new steel superstructure with concrete foundation on piles, 138 ft. by 920 ft., is nearing completion.

Northern Central R.R. Co. have eight wharves at Canton, and three new piers 500 to 934 ft. long. Depth of water alongside, 30 to 32 ft. Wabash R.R. Co. have one merchandise pier at Port Covington. Length, 480 ft.; depth of water alongside, 30 ft. There are also numerous other wharves with a depth alongside of 22 to 27 ft.

The following are the coal piers:—Two at Canton capable of shipping 120 and 180 tons per hour respectively. Ten at Locust Point capable of shipping 100 to 150 tons per hour. These have a depth alongside of

The United States—Baltimore (continued).

from 20 to 28 ft. 9 in. One at Curtis Bay (Baltimore and Ohio Railroad), length, 800 ft.; width, 60 ft.; height, 45 ft. It has twenty-five coal pockets and spouts on each side. Capacity of pier is 1,000 tons per hour. The channel to the pier is 300 ft. wide and 30 ft. deep. One at Port Covington (Wabash R.R. Co.), length, 800 ft.; width, 110 ft.; height, 65 ft. It has forty coal pockets. Capacity of pier is 1,000 tons per hour. Depth of water, 30 ft.

The Baltimore and Ohio R.R. Co. own two elevators. Elevator "C" has a capacity of 1,800,000 bushels, "B" a capacity of 1,500,000. These have a depth alongside of from 25 to 28 ft.

The Northern Central R.R. Co. own two elevators. Elevator No. 1 has a capacity of 800,000 bushels. Depth alongside, 30 ft. Elevator No. 3 has a capacity of 1,000,000 bushels. Depth alongside, 30 ft. There are also several small floating elevators which pass grain from barges to vessels. A pneumatic grain drier has been installed at Locust Point in connection with Elevator "C," with a capacity of from 15,000 to 25,000 bushels per day.

There are sheer legs to raise 125, 50, 35, and 15 tons respectively, also one crane to lift 40 tons. Shipbuilding is carried on and extensive repairs can be done.

Port Regulations.—No vessel is allowed to lay in the stream inside of the port warden's line more than 24 hours. Quarantine regulations are in force from May 1 to November 1. If there is no sickness on board the vessel is allowed to proceed. Should sickness exist on board, the vessel is detained until the sick are removed to the hospital. Ships arriving with emigrants have generally to lie at the quarantine station until the passengers are examined, and the ship perfectly cleaned. The quarantine station is about four miles from the city. Bills of health are required.

Time Signals.—Chronometers can be checked. A black ball is dropped at noon, mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 23 h. 53 m. 32.2 s. local mean time.

Pilotage.—Compulsory. Cape Henry to Baltimore, and vice versa :—Vessels drawing less than 12 ft., 3 dols. 50 c. per foot; 12 to 15 ft., 4 dols. per foot; 15 ft. and over, 5 dols. per foot. Pilots will always be found off Cape Henry and off Hampton Roads. If pilots are detained on board they are paid 3 dols. per day extra.

Port Charges.—**Entrance Fees** :—3 dols. 37 c. **Clearance Fees** :—2 dols. 20 c. **Towage** :—1 c. per gross reg. ton in the harbour; 1½ c. per gross reg. ton at Sparrows Point. **Consular Fees** :—British, 1 dol. 90 c.; Norwegian, 55 c. **Ballast** :—40 to 75 c. per ton. **Labour** :—25 to 30 c. per hour. **Brokerage** :—2½ per cent., according to freight. **Quarantine Dues** :—1 c. per net reg. ton. **Stevedoring** :—*Discharging.*—Iron, copper ore, and general cargoes, 20 to 35 c. per ton; sugar or molasses, 12 c. per hhd. *Loading.*—6½ c. per barrel of oil; 40 c. per hhd. tobacco; Maryland, Ohio, Virginia, and Kentucky, 50 c. per hhd.; 2½ c. per barrel of flour; grain in bulk, 1 dol. 25 c. per 1,000 bushels; in bags, 3 dols. 50 c.; loading grain from schooners, 5 dols. to 5 dols. 50 c. per 1,000 bushels; trimming coal, 7 c. per ton. **Dunnage Wood** :—3 dols. 25 c. per cord. **Surveyor's Certificate** :—10 dols. **Wharfage** :—Vessels of less than 400 tons, 1 dol. 25 c. per day; from 400 to 600 tons, 1 dol. 50 c. per day; 601 to 800 tons,

The United States—Baltimore (continued).

1 dol. 75 c. per day; 801 tons and upwards, 2 dols. per day. 5 dols. per day at fitting up wharves.

Ceiling vessels for grain, $1\frac{1}{8}$, $1\frac{1}{4}$ or $1\frac{3}{4}$ c. per bushel, according to the size of the vessel. Hire of bags, $4\frac{1}{2}$ c. Elevator free. Filling and sewing bags, $\frac{1}{2}$ c. per bushel. **Shipbroker**:—Entrance, 50 dols.; clearance, 50 dols. Vessels with dutiable cargo pay the following Customs charges, viz.:—Entry, 2 dols. 50 c.; survey, 3 dols.; permits, 20 c. each; duty free cargo, entry, 2 dols. 50 c.; survey, 67 c. **Water**:—Tank $\frac{1}{2}$ c. per gallon. **Coal**:—2 dols. 75 c. to 3 dols. 25 c. per ton trimmed in bunkers. **Dockage**:—10 c. per ton per day if less than 1,500 tons; if over, 15 c. per ton first day; 12 c. per day afterwards.

Pro Forma Charges on a steamer of 2,224 register tons, with a cargo of 5,541 tons of ore in, and ballast out, drawing 21 ft. 2 in. loaded:—

	Dols.	c.
Custom House entry, 3 dols. 37 c.; Custom House brokers, 3 dols.	6	37
Tonnage dues at 6 c. per reg. ton	133	44
Brokerage $2\frac{1}{2}$ per cent.	573	91
Pilotage in, 106 dols. 20 c.; out, 54 dols.	160	25
Towage, two services at 37 dols.	74	00
British Consul	1	90
Checking cargo, $\frac{1}{2}$ c. per ton	27	70
Quarantine dues	22	24
Discharging, 22 c. per ton = 1,219 dols. 2 c.; extra labour, 153 dols. 50 c.	1,372	52
Clearance fees and Custom House broker	4	20
Customs night officers	48	00
Attendance fee	50	90
	2,475	43 = £509 7s. 0d.

BANGOR (Maine).

Bangor, in lat. $44^{\circ}47'$ N., long. $68^{\circ}46'$ W., is situated on the Penobscot River, about 24 miles from its mouth, which empties into Penobscot Bay, and is about 60 miles from the ocean.

Population.—21,900.

Exports.—Deals and lumber.

Accommodation.—Penobscot Bay is large and free from obstructions, and vessels sail with southerly winds direct to the city. This is one of the largest lumber ports in the United States. Vessels load at the town, and all deal cargoes are delivered free alongside to ship. Ships drawing 22 ft. loaded can safely load and proceed to sea.

There is a patent slip here capable of taking vessels up to 1,000 tons register.

Pilotage.—Rates vary from about 10 dols. to 25 dols.

Port Charges.—**Towage**:—Vessels in ballast, inwards, 7 c. per reg. ton; outwards with cargo, 9 c. per ton, including towage to Fort Point, 25 miles below the port. Towage to sea, if required, 50 dols. additional.

Wharfage:—Vessels with cargo inwards, free; vessels loading deals, pulp, etc., from railroad dock, free; other docks, 1 c. per ton per day for first 24 hours, afterwards $\frac{1}{2}$ c. per ton register. **Stevedores**:—Deals, 90 c. to 1 dol. per std.; discharging ballast, 40 to 50 c. per ton; boards or other lumber, 40 to 50 c. per std.; molasses, 15 c. per hhd. **Custom House Charges**:—Entrance and clearance, 2 dol. 50 c. each. **Survey**:—Dutiable

The United States—Bangor (Maine) (continued).

cargo, 3 dols.; free cargo or ballast, 67 c. **Tonnage Tax**:—See United States. **Certificate** (tonnage tax):—20 c. **Bill of Health**:—20 c. **Port Doctor's Fee**:—10 dols. **Quarantine Inspection**:—Steamers 10 dols., Sailers 5 dols.

BATH (Maine).

Bath, in lat. 43°55' N., long. 69°52' W., is situated on the right bank of the Kennebec River, 12 miles from its mouth.

Population.—About 11,000.

Import.—Salt.

Accommodation.—The river front is lined with wharves, with every facility for discharging and loading cargoes, and the water is deep enough to admit the largest vessels. There is plenty of water in the channel, and several safe anchorages in the river below Bath, where vessels can lie waiting for tide or wind. There are several good tugs for towing vessels up or down. The Kennebec never freezes over at Bath, though it is generally closed by ice above this place from December until April, and there is rarely floating ice enough in the river to impede navigation. Spring tides rise about 9 ft. High water at full and change at Bath at 12.30; at Seguin Island, off the mouth of the river, 11.15. There is a patent slip with a cradle 200 ft. long, 43 ft. wide; depth forward 9 ft., aft 14 ft.; lifting power, 1,300 tons. Shipbuilding is carried on and engines are made. Ordinary repairs are executed.

The trade of the place is mostly confined to coastwise ports.

The Kennebec is three-quarters of a mile wide at Bath; on the opposite shore is Woolwich, and the wharves of the Knox and Lincoln Railway Company, which road connects the city with Thomaston, Rockland, and Bangor. To the west there is a railway connection with Portland and Boston.

Richmond 18 miles and Gardner 24 miles above, on the Kennebec, are places of considerable trade, but only 13 ft. draught of water can be carried up.

Pilotage.—Strangers should not attempt to enter the river without a pilot, who may at almost any time be obtained off Seguin Island, by making the proper signal.

Port Charges.—**Tonnage Dues**:—See the **United States**. **Stevedore**:—Loading lumber, 40 c. per ton; discharging ballast, 25 c. per ton; coal, 20 c. per ton. **Wharfrage**:—50 c. to 1 dol. per day, according to the size of the vessel. **Commission**:—Procuring freights, 5 per cent.; consignments, 2½ per cent.

Pro Forma Charges on a vessel of 1,094 tons reg. with a cargo of railway iron in, and ballast out:—

	Dols.	c.
Pilotage inwards	20	00
Custom House entry	10	30
Towage inwards	75	00
Tonnage dues, 1,094 tons at 3 c.	32	82
Stevedore discharging, 1,609 tons iron at 40 c. per ton	643	60
Cost, 320 tons ballast, and trimming, at 1 dol. 25 c. per ton	400	00
Towage outwards	75	00
Clearance at Custom House	7	10
Pilotage out	10	00

1,273 82 = £262 2s. 1d.

The United States.

BEAUFORT (South Carolina).

Beaufort, in lat. $32^{\circ}29'$ N., long. $80^{\circ}54'$ W., is about 75 miles S. of Charleston, and is situated on the right bank of the river of the same name, which flows into Port Royal Sound.

Population.—About 2,300.

Accommodation.—Vessels of 21 ft. draught can cross the bar at low water, and ascend to within 4 miles of the town. The distance from the South Channel entrance to the town is about 21 miles. Vessels of 14 ft. draught can reach the town at low water, and load to 16 ft. at docks, or to 20 ft. at the dock of the Atlantic Mills, or at anchor near the town. Spring tides rise from 10 to 12 ft.; neaps, 7 to 9 ft. Rise of tide on outer bar, $6\frac{1}{2}$ to $7\frac{1}{2}$ ft.

Pilotage.—See **St. Helena Sound.**

Port Charges.—**Towage**:—About 8 c. to 10 c. per reg. ton inwards, and 15 c. outwards. Ships usually sail in. **Labour**:—1 dol. per day. **Wood for Dunnage**:—2 dols. 50 c. per cord. Boards, 10 to 16 dols. per 1,000. **Customs Fees**:—Entrance, 3 dols.; clearance, 1 dol. 50 c. **Water**:— $\frac{1}{2}$ c. per gallon.

BEAUFORT (North Carolina).

Beaufort is in lat. $34^{\circ}42'$ N., long. $76^{\circ}38'$ W.

Population.—4,500.

Imports.—Molasses and fruit.

Exports.—Lumber and shingles.

Accommodation.—The harbour is about 14 miles N.W. by N. from the S. entrance of Cape Look-out Shoal; it is accessible with all winds except those from the N.W., and affords safe anchorage. There is a depth of 22 ft. at high water on the bar, and of 19 ft. at low water; rise and fall of tide, 3 ft. Vessels of 16 ft. draught can be carried through the main channel at mean low-water to within a mile of the town; those of 12 ft. draught can get within a quarter of a mile. Vessels coming to this port and not able to enter should run straight for Cape Look-out Light-house, about 8 miles E.N.E. from the bar, and enter the cove drawing 30 ft., and anchor in perfect safety from all weathers. There is anchorage for about fifty vessels drawing 12 to 30 ft. No expense for entering. If afraid to enter, set jack, come within half a mile of the beach and stop, and the life-saving station crew will take the vessel in free of charge. The ship can then communicate with Beaufort over the beach.

Vessels can obtain coal and other supplies here. There are fifty lighters for discharging cargoes.

Pilotage.—Compulsory. For vessels drawing 8 ft. and under, 1 dol. 50 c. per foot; 9 ft., 1 dol. 75 c. per foot; 10 ft., 2 dols. per foot; 11 ft., 2 dols. 25 c. per foot; 12 ft., 2 dols. 50 c. per foot; 13 ft., 3 dols. per foot; 14 ft., 4 dols. per foot; and 15 ft. and over, 6 dols. per foot.

The above rates are for pilotage from Middle Marsh to Lewis' Thoroughfare; vessels piloted beyond these bounds, 75 c. per foot additional. Vessels coming in for shelter, or coal, not loading or discharging cargo, pay half the above rates.

The United States—Beaufort (North Carolina) (continued).

Port Charges.—**Towage** :—25 to 50 dols. **Custom House Charges** :—Same as Wilmington. **Boat Hire** :—1 dol. to 5 dols. per day. **Ballast** :—Sand, 1 dol. 50 c. per ton ; stone, 2 dols. 50 c. per ton, alongside. **Labour** :—20 c. to 35 c. per hour. **Brokerage** :—5 per cent. on chartering, $\frac{1}{2}$ per cent. collecting. **Coal** :—6 to 7 dols. per ton. **Water** :—If taken from ship's boat, free ; if from water-boat, $\frac{1}{4}$ c. per gallon. **Carpenters** :—2 dols. per day of 10 hours. **Stevedore** :—20 to 30 c. per ton. **Manifest** :—1 dol. **Supplies** :—Beef and pork, 6 to 10 c. per lb. Provisions cheap.

BELFAST.

Belfast, in lat. $44^{\circ}25' N.$, long. $69^{\circ}1' W.$, is situated on Penobscot Bay.

Population.—4,700.

Accommodation.—There is 5 fathoms to within a mile of the town. Vessels drawing 15 ft. can come up to the wharves. There is a patent slip.

Tonnage Dues.—See **United States**.

BELLINGHAM.

Bellingham, in lat. $48^{\circ}47' N.$, long. $122^{\circ}30' W.$, is situated on Bellingham Bay.

Population.—35,000.

Imports.—Logs and fish.

Exports.—Lumber, shingles, box shooks, and fresh and canned fish.

Accommodation.—Bellingham is an open harbour, having an area of 70 sq. m., with good anchorage in any part at from 10 to 25 fathoms of water. The harbour can be approached direct from the Straits of Juan de Fuca by the largest vessels, and is protected from all winds. No bar or dangerous shoals. There are three public wharves with sufficient depth of water alongside to accommodate the largest vessels. There are three private wharves also with a frontage of 5,750 ft., several of them having electric loading and discharging gear.

Rise and fall of the tide averages 10 ft. Depth at lowest spring tides, 9 ft. Facilities exist for repairing vessels.

Pilotage.—Not compulsory. **Towage.**—See **Port Townsend**.

Port Charges.—**Mooring** :—25 dols. per vessel. **Entrance Fees** :—5 dols. 50 c. **Clearance Fees** :—2 dols. 75 c. **Ballast** :—1 dol. per ton, alongside the vessel. **Labour** :—50 c. per hour. **Brokerage** :—25 dols.

BOSTON.

Boston, in lat. $42^{\circ}20' N.$, long. $71^{\circ}7' W.$, stands at the head of Massachusetts Bay. Distance from Liverpool, 2,805 miles.

Population.—607,340.

Imports.—Coal, cotton, textile machinery, wool, Egyptian cotton, fruit, steel, macaroni, liquors, sumac, salt, skins and hides, crockery and earthenware, and general merchandise.

Exports.—Grain, flour, raw cotton, apples, steel, lumber, cattle, beef, pork, lard, fish, ice, petroleum, woollens, cottons, paper, boots and shoes, cordage, hardware, and furniture.

The United States—Boston (continued).

Accommodation.—The harbour is very commodious and almost landlocked. There is a water area of 7,000 acres. The depth in the channel inwards from the sea to the quarantine anchorage ground in the lower harbour is 28 ft. at mean low water and $37\frac{1}{2}$ ft. at mean high water. The depth in the channel (500 ft. wide) inward from the quarantine anchorage ground to the upper harbour wharves is 27 ft. at mean low water and $36\frac{1}{2}$ ft. at mean high water. The principal wharves for ocean steamships are dredged to depths varying from 29 to 32 ft. at mean low water. There is good anchorage for vessels of any size. The length of line extended along the water frontage of the wharves and docks, exclusive of the lengths of side docks, which vary from 200 to 1,000 ft., is about 12 miles. All the wharves are fitted with ample sheds and grain and coal elevators.

There are iron sheers on the wharf 125 ft. high, hanging 45 ft. over the cap of the wharf and capable of lifting 100 tons.

The tide rises 8 to 10 ft. ; springs 12 ft. At mean low tide the depth of water varies at different docks as follows :—

	Feet.
Hoosac Tunnel Docks, Charlestown	30-32
Grand Junction Docks, East Boston	30-36
New York, New Haven and Hartford Railway Docks, South Boston	24-30

There is every facility for the repair of ships and machinery.

The following are the dimensions of the principal dry docks :—

Government No. 1	stone is 384 feet long, 61 feet wide at the entrance, and $25\frac{1}{2}$ feet on the sill.
„ No. 2	„ „ 740 „ „ 100 „ „ „ „ „ 30 $\frac{1}{2}$ „ „ „
Simpson's No. 1	„ „ 467 „ „ 66 „ „ „ „ „ 17 $\frac{1}{2}$ „ „ „
„ No. 2	„ „ 250 „ „ 45 „ „ „ „ „ 17 „ „ „
„ No. 3	„ „ 165 „ „ 36 „ „ „ „ „ 12 „ „ „

The length is over all ; width of entrance is at the high water ordinary spring level, except the two Government docks, which are at the coping. The depth on the sill is at high water ordinary springs. There are four patent slips with lifting powers of 1,800, 600, 500, and 350 tons respectively. Private vessels are only permitted to use a Government dock in an emergency, and when there is no private dock in the vicinity available for the purpose.

Time Signals.—Chronometers can be checked. A black ball is hoisted on a flagstaff on the roof of Ames building at 11 h. 55 m. a.m. and dropped at noon mean time of 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 0 h. 15 m. 46.3 s. local mean time.

Pilotage.—Compulsory for vessels of 350 tons register and over in the foreign trade. Inward bound vessels in the foreign trade, of less than 350 tons register, are liable for half pilotage, if spoken. Outward bound vessels in the foreign trade of less than 350 tons register do not pay pilotage fees unless the services of a pilot are requested. There are three pilot stations : (1) near the entrance of the harbour, a few miles outside Boston light ; (2) off Cape Cod, from where Race Point bears S. to where the Highland Light bears W.N.W. (the land in fair weather to be kept in sight from boat's deck) ; (3) near Boston Light-ship, the inner cruising line being drawn from Minots Light to Half-Way Rock, off Marblehead, the outer limit being with the lightship in sight by day, or her lights by night, in clear weather. The pilot signal by day is a white and blue flag, white next to the mast, and in the night a white masthead light. Pilotage rates the same all the year round.

The United States—Boston (continued).

OUTWARD RATES.

Draught of Water.	Rate per Foot.
Feet.	Dols. c.
7	1 65
8	1 66
9	1 67
10	1 70
11	1 74
12	1 78
13	2 00
14	2 00
15	2 10
16	2 25
17	2 50
18	2 75
19	3 00
20	3 25
21	3 50
22	3 75
23	4 00
24	4 25
25	5 00

INWARD RATES.

Draught of Water.	Rate per Foot.
Feet.	Dols. c.
7	2 64
8	2 69
9	2 73
10	2 77
11	2 80
12	2 85
13	2 95
14	3 45
15	3 50
16	3 55
17	3 75
18	3 80
19	4 00
20	4 25
21	4 50
22	4 50
23	5 00
24	5 00
25	5 00

All vessels drawing over 25 ft., 5 dols. per foot draught.

Port Charges.—Wharfage :—Vessels do not pay wharfage while loading or discharging. Vessels of 1,000 to 1,500 tons are allowed 40 days to load ; over 1,500 tons, 45 days. To discharge 1,000 to 1,500 tons, 20 days ; over 1,500 tons, 25 days. **Port-warden :**—4 dols. each first visit ; subsequently, 3 dols. **Quarantine Dues :**—Schooners, 5 dols. ; ships, 8 dols. **Tonnage Dues :**—6 c. per net reg. ton (not exceeding 30 c. per ton per annum). **Government Dock Charges :**—Vessels less than 450 ft. in length or 60 ft. in breadth, or drawing 19 ft. or less ; steamers, 13·6 c. per gross ton for docking (including undocking) ; sailing vessels, 13·6 c. per net ton for docking (including undocking) ; steamers, 11·2 c. per gross ton per lay day ; sailing vessels, 11·2 c. per net ton per lay day. Vessels more than 450 ft. in length or more than 60 ft. in breadth or drawing more than 19 ft.—Steamers, 8 c. per gross ton for docking (including undocking) ; sailing vessels, 8 c. per net ton for docking (including undocking) ; steamers, 8 c. per gross ton per lay day ; sailing vessels, 8 c. per net ton per lay day. **Discharging :**—Ballast, 85 c. per ton ; coal, 25 c. ; cotton, 10 c. per bale ; general cargo, 30 to 40 c. per ton ; labour, 30 c. per hour. **Loading and Furnishing Ballast :**—Earth, 80 c. ; stone, 1 dol. 25 c. ; shingle, 1 dol. 50 c. per ton. **Loading :**—General cargo, 33 to 40 c. per ton ; 3 dols. per 1,000 bushels trimming ; 2 c. for stowing bags ; surveyor's fee, 10 dols. ; petroleum, 10 c. per barrel ; dunnage wood, 15 dols. per 1,000 ft. (superficial) ; corn in bags, $\frac{1}{2}$ c. per bushel ; grain in bulk, 3 dols. per 1,000 bushels (no charge for elevating) ; cotton, 12 c. per bale ; general cargo (but no barrels), 35 to 40 c. per ton weight or measurement ; barrel cargo, 3 c. per barrel ; staves, 2 dols. per 1,000 ; large staves or butts, 4 dols. per 1,000 ; shooks, 3 c. per bundle ; hay, 8 c. per bale (large), 4 c. per bale (small) ; horses at 25 c. each ; cattle, 10 c. each, hogs, 5 c. each ; sheep, 3 c. each, including in each case putting on board and stowing all hay and food stuffs. **Labour :**—30 to 50 c. per hour, day time ; night time, 40 to 60 c. per hour ; Sundays

The United States—Boston (continued).

and holidays, 60 c. to 1 dol. per hour, according to cargo; cargo clerks, 10 dols. to 18 dols. per week; watchman, 2 dols. 50 c. per day; carpenters, shipwrights, and caulkers, 3 dols. 50 c. per day. **Towage**:—Rates according to tariff. **Commission**:—On ocean freight, $2\frac{1}{2}$ per cent. **Brokerage**:—On flour, meal, cattle, etc., $1\frac{1}{4}$ per cent. **Provisions**:—Beef and mutton, 12 c. per lb.; bread, 6 c. per lb.; eggs, 30 c. per dozen. Ice about 4 dols. per ton. **Water**:—By contract, 15 dols. per voyage.

Pro Forma Charges on a steamer of 4,473 gross tons (2,925 net tons):—

	Dols.	c.
Tonnage dues, 6 c. per net ton reg.	175	50
Custom House forms, entrance	5	50
" " permits	0	40
" " bonds	0	40
Entry at Consuls	1	25
Clearance at Consuls	15	00
Doctor	5	00
Noting protest	1	00
Signing cattlemen on board ship, including 50 c. for each man, say	10	00
Port-warden, examining and surveying hatches and stowage of cargo	13	00
Port-warden, giving copy of report	5	00
Customs night-work	20	00
Use of boat and attendance entering and leaving dock	4	00
Use of boat, extra tide mooring ship	2	00

258 05 = £53 ls. 11d.

BRAZOS SANTIAGO.

Brazos Santiago, in lat. $26^{\circ}5'$ N., long. $97^{\circ}10'$ W., is about 9 miles N. of the mouth of the Rio Grande.

This port is no longer used for commercial purposes.

BRIDGEPORT.

Bridgeport, in lat. $41^{\circ}12'$ N., long. $73^{\circ}12'$ W., is situated on a small inlet of Long Island Sound, on the Pequonnock River, about a mile and a half from the mouth.

Population.—84,275.

Imports.—Silk and cotton yarns, lumber, etc.

Accommodation.—Vessels of 18 ft. draught can cross the outer bar at high water, and can reach the wharves with the same depth; vessels of $11\frac{1}{2}$ ft. draught can reach the wharves at low water. The narrowest width of the channel is 300 ft., and vessels are sheltered from all winds. There is a depth of 24 ft. at high water, and of 18 ft. at low water. Good wharfage is to be had. There is a small patent slip.

Pilotage.—Compulsory. Steamers, 1 dol. 50 c. per foot draught; sailing Vessels, 1 dol. 50 c. per foot draught. **Towage**:—From 5 to 25 dols., according to size.

Port Charges.—**Tonnage Dues**:—3 c. per ton. **Entrance at Customs**:—Vessels under 100 tons reg., 1 dol. 50 c. Vessels of 100 tons and over, 2 dols. 50 c. **Clearance**:—At the same rates. **Surveying Cargo**:—Vessels under 100 tons, 1 dol. 50 c. Vessels of 100 tons and over, 3 dols. **Wharfage**:—1 c. per ton. **Labour**:—Dock labour, 30 to 40 c. per hour.

The United States.

BRUNSWICK.

Brunswick is in lat. $31^{\circ}11'$ N., long. $81^{\circ}40'$ W.

Population.—10,000.

Exports.—Lumber, cotton, timber, naval stores, staves, shingles, cross-ties, wool, hides, tallow, etc.

Accommodation.—Brunswick harbour is about 20 miles S. of Doboy and 80 miles S. of Savannah. The harbour is designated on the Coast Survey Charts of the United States as "St. Simon's Sound and Turtle River." It is merely an arm of the sea, but it is one of the best, if not the best, south of Chesapeake Bay. Vessels can cross this bar with 20 ft. of water at neap tides, and 23 ft. spring tides. Distance from the bar to Brunswick, 12 miles. There is 2 miles of quayage, a portion of which has from 21 to 23 ft. alongside. Portable hoisting engines are used for loading and discharging.

There is a patent slip with a lifting power of 350 tons.

All vessels arriving in this port and having sickness on board, whether or not having clean bills of health, must anchor at the quarantine ground, 3 miles below the city.

There are no special harbour regulations, excepting the prohibition of throwing ballast overboard, and keeping lights at night.

Colonels and Blythe Islands, on Brunswick harbour, have a good depth of water, but at present have no wharves or other shipping facilities.

Pilotage.—Rates for the Bar of St. Simon and Turtle River, and the Bar of St. Andrews and Great St. Illa River :—

Feet.	Pilotage.	Feet.	Pilotage.
	Dols. c.		Dols. c.
6	16 75	15	71 00
6½	18 75	15½	74 00
7	20 25	16	79 00
7½	21 75	16½	82 25
8	23 00	17	87 00
8½	24 50	17½	89 50
9	26 00	18	93 00
9½	27 75	18½	99 00
10	31 75	19	105 00
10½	37 00	19½	111 00
11	39 00	20	117 00
11½	41 25	20½	123 00
12	43 75	21	129 00
12½	46 75	21½	135 00
13	49 25	22	142 00
13½	52 25	22½	160 00
14	58 00	23	185 00
14½	67 00	23½	200 00

Port Charges.—Towage :—

	Per ton.
Sea to Brunswick, Back River, or St. Simon, and to sea (contracted)	25 c.
Sea to Railroad Wharf and to sea (contracted)	28 c.
Quarantine to Brunswick and to sea (contracted)	20 c.
Quarantine to Railroad Wharf and to sea (contracted)	23 c.
Sound to Back River or St. Simon, and to sea (contracted)	20 c.
Sea to Sound (light)	6 c.
Sound to Quarantine (light)	3 c.

The United States—Brunswick (continued).

	Per ton.
Sound to Railroad Wharf (light)	8 c.
Quarantine to Brunswick (light)	4 c.
Brunswick or Quarantine to Railroad Wharf or Beach (light)	3 c.
Railroad Wharf to Dennis Folly (loaded)	12 c.
Railroad Wharf to sea (loaded)	22 c.
Brunswick to Dennis Folly (loaded)	8 c.
Dennis Folly to sea (loaded)	12 c.
Brunswick to Back River or St. Simon (light)	5 c.
Quarantine to St. Simon or Back River (light)	4 c.
Sound to St. Simon or Back River (light)	3 c.
St. Simon or Back River to Sound (loaded)	12 c.
Sound to sea (loaded)	12 c.
Brunswick, St. Simon or Back River to sea (loaded)	18 c.
Dropping from dock to dock and docking with tide (light)	10 dols.
Extra services steamer, more than one tide	15 dols.
Each steamer ordered per tide	15 dols.

Harbour-master's Fees :—10 dols. **Custom House Charges** :—7 to 10 dols. **Labour** :—1 dol. 75 c. per day. **Stevedore's Charges** :—Re-sawn lumber, 35 c. to 65 c. per 1,000 ft. ; 75 c. to 1 dol. for porting and stowing ; cotton (screwed), 60 c. per bale ; ballast, discharging and wheeling, 20 c. to 35 c. per ton. **Commissions** :—On disbursements, $2\frac{1}{2}$ per cent. ; freight and chartering, 5 per cent. ; address commission on timber vessels, $2\frac{1}{2}$ per cent. **Water** :—35 c. per 100 gallons.

Pro Forma Charges on a vessel of 1,149 tons reg. with a cargo of lumber for Buenos Ayres :—

	Dols.	c.
Custom House entry and tonnage dues	72	31
Stevedore's bill	891	90
Water bill	16	00
Towage	287	00
Pilotage	205	74
Custom House clearance	2	90
Clearance (Consul)	35	50
Butcher	77	20
Advertising crew and manifests	2	05
Shipping master's bill	343	00
Wood and coal	28	50
Chandlery	334	81
Stores	500	49
	2,797	40 = £575 12s. 1d.

BUFFALO.

Buffalo, in lat. $42^{\circ}52'$ N., long. $78^{\circ}50'$ W., is situated on Buffalo Creek, and at the head of Niagara River.

Population.—400,000.

Imports.—Grain, flour, iron ore, etc.

Exports.—Bread stuffs, beef, pork, lard, pig-iron, coal, steel rails, linseed oil, hard and soft lumber, machinery, heavy castings, etc.

Accommodation.—The harbour is easy of access in any weather. Normal depth of water is 20 ft. Vessels of 12,000 tons enter and ascend the harbour to grain elevators, blast furnaces, and ore docks, $2\frac{1}{2}$ miles from the entrance. The harbour is protected on the south-west by a Government breakwater 36 ft. wide on the top and 12 ft. above normal water level ; built of stone and concrete, lapping the harbour entrance, and extending to the mainland on the south shore of Lake Erie, forming a

The United States—Buffalo (continued).

safe and commodious outer harbour 4 miles long by $\frac{3}{4}$ mile wide. Depth 18 to 24 ft.

Connection with Tide Water.—Buffalo is the western terminus of the Erie Canal, which connects the Great Lakes with the Hudson River at West Troy, distant 345 miles, thence by the Hudson River to New York, distant 150 miles. Canal barges average 240 tons. The canal is being enlarged to accommodate barges of 1,000 tons. The many railroads and steamship lines converging here make this the great granary of the west, and distributing point both east and west. The trade of the port is increasing by leaps and bounds, and with the deepening of the inner harbour, safe and commodious outer harbour, and enlargement of Erie Canal, it is expected the increase will be still more rapid. There is at present under construction a ship canal around the shoal waters at the head of Niagara River, and when this improvement is completed the largest vessels will be able to go directly from the lake to the dockage along the Niagara Frontier in the vicinity of Tonawanda. This improvement will give Buffalo 10 miles of additional harbour facilities.

There are four dry docks, all having facilities for building and repairing steel and modern vessels. 90 per cent. of the plant is operated by electricity furnished by the Niagara Falls Power Companies, distant 24 miles. The following are the dimensions of the dry docks :—

Dock.	Length over all in feet.	Width of Entrance at High Spring Level in feet.	Depth on Sill at High Springs.
Union, No. 1	478½	60	17
Union, No. 2	349	45	14
Mills & Co., No. 1	390	46	14
Mills & Co., No. 2	295	40	11½

Time Signals.—Chronometers can be checked. A black ball is hoisted on a flagstaff on the S.E. side of Prudential building at 11.55 a.m., and dropped at noon local mean time, equal to 5 h. 15 m. 30 s. Greenwich mean time.

Port Charges.—Customs Dues :—Entry of manifest, 30 c.; clearance to foreign port, 10 c.; domestic ports, 20 c.; no charge is made for entry from domestic ports. **Grain Elevator Charges :**—½ c. per bushel, including ten days storage, for handling grain. **Dry Dock Charges :**—Dockage, 20 c. per reg. ton for first 500 tons; 10 c. per ton over 500 tons. For use of dock while repairing, 6 c. per ton per day of 24 hours; this charge commences 24 hours after the dock is free of water. Ship chandlery of all descriptions always obtainable at current prices. **Fuel :**—Steam fuel is abundant. 2 dols. 75 c. per ton f.o.b. for lump coal; 2 dols. 65 c. for “run of mine.” This charge covers loading of coal from scows by steam derrick, and trimming coal bunkers.

CALAIS.

Calais, in lat. 45°8' N., long. 67°19' W., is situated opposite St. Stephen (Canada), and possesses the same advantages as to depth of water, etc., as those enjoyed by St. Stephen (which see).

The United States—Calais (continued).

Population.—8,000.

Port Charges.—Tonnage Dues.—See **United States.** For other charges see St. Stephen.

CAMDEN.

Camden, in lat. $44^{\circ}15' N.$, long. $69^{\circ}3' W.$, is situated about 24 miles from the entrance of Penobscot Bay.

Accommodation.—Vessels drawing 24 ft. can enter the outer harbour at low water, and find safe anchorage and lie well sheltered within a quarter of a mile from the wharves. The inner harbour has been dredged, and will admit vessels drawing 16 ft. to the principal wharves at spring tides. Smaller vessels can lie water-borne at most of the wharves. The bottom is soft mud. The balance dock will take vessels of 350 tons net register. It is 174 ft. long, 49 ft. wide at the entrance, and 10 ft. on the sill. The patent slip has a cradle 250 ft. long and a lifting capacity of 1,500 tons. Telegraphic communication with the world.

Pilotage.—Strangers from off-shore are advised to secure a pilot from the island of Matinicus at the entrance to the bay.

Port Charges.—Tonnage Dues.—See **United States.** **Stone Ballast** :—50 c. per ton delivered on wharf.

CHARLESTON.

Charleston is in lat. $32^{\circ}48' N.$, $80^{\circ}2' W.$

Population.—56,320.

Imports.—Cottons, woollens, linens, silks, hardware, iron and steel, sugar, wine, tea, spices, salt, slate, ale, salts, crockery, pyrites, nitrate soda, potash, and Peruvian guano.

Exports.—Cotton, phosphate rock, naval stores, staves, lumber, etc.

Accommodation.—Vessels drawing 30 ft. can safely enter the harbour. There is an easy entrance, 600 ft. wide, over the bar of 26 ft. at low water, with between 5 and $5\frac{1}{2}$ ft. rise and fall of tide. Depth at high tide, 31 ft. Vessels load cargoes of phosphate rock in the city and at the landings, on the Ashley River, about 12 miles above its confluence with Cooper River. In the port there is a depth of 50 ft. at high water. Good holding ground in the harbour. Numerous private and railway wharves, with from 10 to 20 ft. alongside at high water. Two of the wharves will accommodate vessels drawing 22 to 23 ft. Vessels of any considerable size cannot go alongside the wharves. Much dredging is required. There are several small cranes. There is nearing completion a large dry dock for the U.S. navy, with complete workshops, which, when not employed by them, will be available for merchant vessels of any nationality for repairs, etc. There is a wooden floating dock, 150 ft. long, 48 ft. wide at the entrance, 11 ft. on the sill, and with a lifting power of 700 tons.

CHICAGO.

Chicago, in lat. $41^{\circ}50'$ N., long. $87^{\circ}40'$ W., is situated on the W. shore of Lake Michigan, 40 miles from the head or S. end of the lake, at the mouth of the Chicago river.

Population.—2,050,000.

Imports.—Dry goods, tea, leaf tobacco, china and glassware, glove leather, fruits and nuts, fish, chemicals, millinery goods, iron and steel, spirits, toys, lumber, etc.

Exports.—Maize, wheat, meat-products, bread-stuffs, twine, etc.

Accommodation.—The river and the north and south branches are navigable for six miles from Lake Michigan. Main river is 200 ft. wide, and its south branch is being made this width to the east end of the drainage canal, six miles from the lake. The current from the lake now flows from one to three miles per hour, and discharges into the drainage canal from 200,000 to 300,000 cubic ft. of water per minute. The tunnels have been removed and the depth increased to 26 ft. in the south branch and 20 ft. or more in the north branch. Chicago has 30 miles of docks.

Largest vessels that can pass through the St. Lawrence and Welland canals—length over all 260 ft. ; breadth, 44 ft. 4 in. ; draught 14 ft. Largest lake steamers—length over all, 600 ft. ; breadth, 60 ft. ; moulded depth, 33 ft. ; capacity, 12,000 tons ; draught, 20 ft. Dimensions of locks are : Length, 270 ft. ; breadth, 45 ft. ; depth of water, 14 ft. There is good anchorage in 10 fathoms of water for 8 or 10 miles in all directions from the harbour.

The following are the dry docks :—

Dock.	Length over all in feet.	Width of Entrance at High Springs Level in feet.	Depth on the Sill at High Springs in feet.
Miller Bros., No. 1	310	50	14
„ „ No. 2	280	42	12
„ „ No. 3	260	40	10
Chicago Shipbuilding Co.	564	70 at coping	16

Time Signals.—Chronometers can be checked. A red ball is hoisted on a flagstaff on the top of the Masonic Temple, 5 minutes before the signal and dropped at noon central standard time, equal to 6 h. 0 m. 0 s. Greenwich mean time, and 0 h. 9 m. 29.5 s. local mean time.

Pilotage.—Not necessary.

Port Charges.—**Tonnage Dues** :—6 c. per net reg. ton. **Towage** :—Rates according to tonnage and distance. About 75 dols. for a steamer of 2,000 tons reg. **Dock Labour** :—30 c. per hour. **Stevedores** :—Loading general cargo, 30 c. per ton ; grain, 75 c. per 1,000 bushels. Discharging, iron ore, 20 c. per ton. Coal is unloaded by consignees free of handling to ship. **Brokerage** :—Grain cargoes, 25 dols. ; miscellaneous cargoes, about 50 dols.

Pro Forma Charges on a steamer of 2,000 tons reg., with a cargo of coal in and grain out :—

The United States—Chicago (continued).

Towage, in and out	Dols.	c.
Tonnage tax	75	00
Trimming 4,000 tons of grain	120	00
Brokerage	99	75
	75	00
<hr/>		
	369	75 = £76 1s. 8d.
<hr/>		

COOS BAY.

Coos Bay, in lat. 43°22' N., long. 124°10' W., is about 2 miles E.N.E. of Cape Arago.

Imports.—Provisions and general merchandise.

Exports.—Lumber, coal, dairy produce, etc.

Accommodation.—The entrance to the bay is being improved, and when completed it is expected there will be an average depth of 20 ft. at mean low water, in a channel 1,500 ft. wide. There is now 22 ft. of water on the bar, and 25 ft. in port. The tidal area of the bay is 24 sq. m., with 25 ft. depth up to Empire City at low water. Good anchorage.

Vessels well acquainted sail in with N.W. wind, which is fair, or S., which is leading. Other vessels are either piloted or towed in by tugs; but all sailing vessels are towed out as a matter of safety, not of compulsion. The bar should not be attempted by strangers. The mean rise of the tide is from 5 to 6 ft. The Custom House is situated at Empire City, three miles up the bay. There are wharves here with 12 ft. at low tide. North Bend, the leading shipyard, is 4 miles further up the bay.

Pilotage.—No regular charge, generally 25 dols. in and out.

Port Charges.—There is no fixed price for towage except on lumber vessels, which are towed in and out for 50 c. per 1,000 ft. No harbour dues nor light dues. Wood, water, provisions, etc., cheap and abundant. Customs fees, tonnage duties, etc., the same as at other ports on this coast. No regular stevedore's charges, but ordinary labourers can be had at 30 c. per hour.

COOSAW.

Coosaw is situated upon the river of the same name, about 7 miles from its entrance. This river flows into St. Helena Sound.

Export.—Phosphate rock.

Accommodation.—The bar has a depth of 22 ft. spring tides, but a ship should be towed in the summer, as the prevailing winds are southerly, and there is shallow water some distance from the anchorage to the sea buoy, outside the buoy (which bears from Martin's Industry Lightship—entrance of Port Royal—N.E. $\frac{1}{2}$ N., distant 15 miles from Charleston bar, W.S.W. nearly 30 miles). The land is low, and requires great caution in approaching. The Cambe Light is 8 miles from the sea-buoy, but, unless in clear weather, it cannot be seen; 8 fathoms water is near enough to approach at night. The Custom House for St. Helena Sound and its tributaries is located at Coosaw, and also a marine railway, machine and blacksmith shops, and a ship-chandlery establishment. Vessels arriving at St.

The United States—Coosaw (*continued*).

Helena Sound are towed up to Coosaw, and discharge their ballast at the Coosaw Mining Company's wharf. (It is a punishable offence if thrown overboard.) They are then loaded under a shute (free of charge) down to a depth of 14 ft. 6 in., and towed back into St. Helena Sound. The average amount of cargo loaded is 300 tons per day. Balance of cargo, if any is required, is floated alongside of vessels in lighters, free of charge. Quarantine regulations are governed by the St. Helena Sound Station.

Pilotage.—Up and down the river, 10 dols. each way. **Towage:**—Up and down the river, 25 dols. each way. Over St. Helena bar (by the Company's tug) 15 c. per reg. ton.

Port Charges.—Tonnage Dues:—See **United States. Dunnage Wood:**—Pitch-pine lumber and deals, 25 dols. per 1,000; pine wood, 5 dols. per cord, delivered alongside vessel. **Water:**—Good spring water, delivered on board by water-boats, 2 c. per gallon. **Dockage:**—While discharging ballast, 10 dols. per day. For discharging, wharfage, and removing in from dock to ballast ground, 30 c. per ton.

Pro Forma Charges on a ship of 800 tons reg. :—

	Dols.	c.
Custom House fees	7	67
Water, 900 gals. at 2 c.	18	00
Dockage, 2 days.	20	00
Discharging ballast, wharfage, etc.	240	00
River towage	50	00
„ pilotage	20	00
Bar towage	120	00
„ pilotage	168	02

643 69 = £132 8s. 10d.

COQUILLE RIVER.

The mouth of this river is in lat. 43°10' N., long. 124°10' W.

Exports.—Lumber and produce.

Accommodation.—There is from 7 to 10 ft. of water on the bar. Strangers should not attempt to cross without a tug. A small steam-tug is employed for this purpose.

DARIEN.

Darien, in lat. 31°22' N., long. 81°26' W., is situated on Doboy Inlet, or river, about 20 miles from the entrance.

Exports.—Timber and lumber.

Accommodation.—The depth of water on the bar is 22 ft. at springs, and 17 ft. at neaps. Vessels can load to 18 ft. with safety. The loading ground for ships is at Doboy Island. Vessels generally sail up and steam out: they load to 17 ft. at the wharves, and then finish to 20 ft. at Doboy Island. Good water is obtainable.

Pilotage.—Pilots can always be had off the bar, and strangers should not attempt to enter without one, as the bar is constantly changing. **Darien and Sapelo rates:**—

The United States—Daríen (continued).

Draught.	Bar Pilotage.	River Pilotage.	Total Amount.
	Dols. c.	Dols. c.	Dols. c.
6 feet and under	10 76	6 46	17 22
7 " "	13 06	7 83	20 89
8 " "	14 83	8 89	23 72
9 " "	16 69	10 01	26 70
10 " "	21 08	12 64	33 72
11 " "	25 55	15 33	40 88
12 " "	28 58	17 14	45 72
12½ " "	30 30	18 18	48 48
13 " "	31 84	19 11	50 95
13½ " "	34 15	20 49	54 64
14 " "	38 91	23 35	62 26
14½ " "	42 74	25 64	68 38
15 " "	45 08	27 04	72 12
15½ " "	47 17	28 30	75 47
16 " "	50 32	30 19	80 51
16½ " "	54 13	32 48	86 61
17 " "	57 34	34 41	91 75
17½ " "	61 02	36 72	97 74
18 " "	64 05	38 55	102 60
18½ " "	67 17	40 34	107 51
19 " "	71 72	43 04	114 76
19½ " "	74 96	44 99	119 95
20 " "	78 30	46 98	125 28
20½ " "	82 81	49 69	132 50
21 " "	87 50	52 50	140 00
21½ " "	93 75	56 25	150 00
22 " "	100 00	60 00	160 00
22½ " "	106 25	63 75	170 00
23 " "	114 06	68 44	182 50
23½ " "	121 88	73 12	195 00
24 " "	131 25	78 75	210 00

Detention of pilots per day 4 dols. 32 c.

Drop 7 dols.

Port Charges.—Harbour Dues :—10 c. per ft. of over deck. **Towage :—**In, 15 c. per reg. ton ; out, 25 c. Discharging ballast, 50 c. per ton ; general cargo, 50 c. per ton measurement. **Stevedore :—**Loading Ballast, 50 c. per ton ; cotton, 60 c. per bale ; timber, 2 dols. per m. ; lumber, 85 c. to 1 dol. 25 c. per m. Lighterage of cotton, 25 c. per bale ; compressing, 60 c. per bale. **Ballast :—**50 c. per ton. **Commission :—**On freight, 2 per cent.

Pro Forma Charges on a vessel of 747 tons reg., ballast in and cargo out, drawing 10 ft. in and 18 ft. 9 in. out : cargo of 512,000 ft. of timber :—

	Dols. c.
Pilotage in	33 72
Moving from loading ground	9 00
Stevedore, 2 dols. per 1,000 ft.	1,024 00
Mooring and unmooring	50 00
Harbour master, 2 c. per ton	14 94
Customs clearance	5 50
Towage to sea (by agreement)	175 00
Tonnage dues, 3 c. per ton	22 41
Pilotage out, 19 ft.	114 76

1,449 33 = £297 16s. 0d.

Sapelo is the loading place for vessels of any size for Daríen.

The United States.

EASTPORT.

Eastport, in the State of Maine, is situated on the largest island in Passamaquoddy Bay. Lat. $44^{\circ}53'$ N., long. $67^{\circ}1'$ W.

Population.—About 6,000.

Imports.—Coal, fish, salt, and West Indian produce.

Export.—Canned fish, in small quantities, and tin cans.

Accommodation.—There is a depth of 60 ft. of water about 30 yards from the wharves, and at the wharves 16 ft. The anchorage is safe and good; tides rise 18 to $20\frac{1}{2}$ ft. Depth at high water 100 to 150 ft., low water 75 to 125 ft. Lowest spring tide 3 to 5 ft. less. On making Head harbour light, on the N. end of Campobello Island, there is a clear channel varying from $\frac{1}{2}$ to 1 mile in width, and $4\frac{1}{2}$ miles long up to Eastport.

Pilotage.—Not compulsory. Local pilots can always be found, and will bring vessels in at a nominal figure.

Port Charges.—**Tonnage Dues.**—See **United States.** **Wharfage** :—1 to 2 dols. per day. Entrance, 5 dols. 50 c. Clearance, 2 dols. 50 c. **Labour** :—2 dols. per day. **Ballast** :—50 c. per ton. **Towage** :—Rates according to agreement. **Water** :— $\frac{3}{4}$ c. per gallon delivered on board. **Provisions** :—Beef, 20 c. to 30 c. per lb. **Wood** :—5 dols. per cord. **Coal** :—6 dols. 50 c. to 7 dols. per ton. **Commission** :—On freight, 5 per cent.; collecting, $2\frac{1}{2}$ per cent.; purchasing, $2\frac{1}{2}$ per cent.

Pro Forma Charges on a vessel of 500 tons reg. :—

	Dols.	c.
Tonnage dues, at 3 c. per ton, 15 dols.; Custom House fees, 8 dols.	23	00
Consul's fees	4	50
6 days' wharfage, at 1 dol. 50 c.	9	00
Labour—discharging, 96 dols.; sundries, 50 dols.	146	00
$2\frac{1}{2}$ per cent. commission on 2,500 dols. freight	62	50
Cash paid, market bill	60	00
	305	00 = £62 15s. 2d.

FERNANDINA.

Fernandina is in lat. $30^{\circ}37'$ N., long. $81^{\circ}33'$ W.

Population.—3,750.

Exports.—Naval stores, lumber, phosphate, railway ties, and cotton.

Accommodation.—This is the furthest south deep-water port on the Atlantic coast. The harbour is land locked, and is 4 miles from the sea buoy; it has good holding ground, and is well protected from eastern storms. The entrance to Fernandina is Cumberland Sound. There is a depth of 30 ft. at the entrance, and an average depth of 35 to 60 ft. throughout every part of the bay. The depth on the bar at mean low water is 22 ft. Any vessel that can cross the bar can get up here. There are wharves with 12 to 25 ft. water alongside, with railway and hoisting engines. There is an elevator for phosphate rock.

Direct steamship communication with Europe, and daily steamboat connection with New York.

The United States—Fernandina (continued).

Pilotage.—

BAR PILOTAGE.

Draught.	Pilotage.	Draught.	Pilotage.
	Dols. c.		Dols. c.
9 feet and under, per foot . . .	2 00	19½ feet . . .	97 50
9½ feet . . .	27 75	20 " " " "	100 00
10 " " " "	30 00	20½ " " " "	123 00
10½ " " " "	37 00	21 " " " "	126 00
11 " " " "	40 00	21½ " " " "	129 00
11½ " " " "	42 50	22 " " " "	132 00
12 " " " "	45 00	22½ " " " "	135 00
12½ " " " "	48 00	23 " " " "	138 00
13 " " " "	50 00	23½ " " " "	141 00
13½ " " " "	52 50	24 " " " "	144 00
14 " " " "	56 00	24½ " " " "	147 00
14½ " " " "	65 00	25 " " " "	150 00
15 " " " "	72 00	25½ " " " "	153 00
15½ " " " "	75 00	26 " " " "	156 00
16 " " " "	80 00	26½ " " " "	159 00
16½ " " " "	82 50	27 " " " "	162 00
17 " " " "	85 00	27½ " " " "	165 00
17½ " " " "	87 50	28 " " " "	168 00
18 " " " "	90 00	28½ " " " "	171 00
18½ " " " "	92 50	29 " " " "	174 00
19 " " " "	95 00	29½ " " " "	177 00
		30 " " " "	180 00

Port Charges.—Harbour-master's Fee:—20 dols. (maximum).
Quarantine Dues:—5 dols. **Shipbroker**:—Entrance and clearance, 50 dols.
 commission on freight, 2½ per cent. **Stevedore**:—Loading phosphate rock
 35 c. per ton; lumber, 55 c. per m.

Pro Forma Charges on a steamer, loading cargo at Fernandina,
 drawing 16½ ft. loaded:—

	Dols. c.
Entrance	3 77
Tonnage tax	166 62
Clearance	3 00
Outward pilotage	82 50
Stevedoring, 10,000 bls. resin at 5 c.	500 00
Dockage, 4 days at 15 dols.	60 00
Attendance	25 00
Overtime for Sunday work	10 63

851 52 = £175 4s. 2d.

GALVESTON.

Galveston is in lat. 29°16' N., long. 94°50' W.

Population.—40,000.

Imports.—Coal, salt, coffee, ale, earthenware, iron, cement, and
 other general merchandise.

Exports.—Cotton, cotton-seed oil, ores, cotton-seed cake, grain, pine,
 cedar, and black walnut timber.

Accommodation.—Vessels bound here should always keep well
 to the E. of the entrance, as there is a strong current running to the S.W.
 There is a lighthouse, painted black and white, in alternate bands on Bolivar
 Point, which can be seen in clear weather at a distance of 16 miles. There
 is a beacon painted black at the end of South Jetty. There is also a light-
 ship at Heald Bank, 28 miles E.S.E. from the entrance of Galveston bar,
 having two white fixed lights and a steam syren. In running for the entrance

The United States—Galveston (continued).

Bolivar lighthouse should bear W. by N., approaching until reaching 7 fathoms, and in thick weather vessels always anchor in this depth of water. During 1907 the channel through the jetties to the sea averaged 28½ ft. in depth at mean low tide over the outer bar, the inner bar having now entirely disappeared. Arrangements have been made to extend the south jetty for a distance of about 900 ft. The harbour channel is being dredged, and when operations are completed will be 750 ft. in width, and 30 ft. deep in front of all the wharves. There is a patent slip with cradle, 175 ft. long; 12 ft. forward, and 15 ft. aft on the blocks, capable of taking a vessel of 1,000 tons. Ordinary repairs can be undertaken at one of the two yards. There is a grain elevator with a capacity of 1,500,000 bushels; a second with a capacity of 600,000 bushels; a third with a capacity of 750,000 bushels; and a fourth with a capacity of 1,000,000 bushels. Tow boats are obtainable when required.

Time Signals.—Chronometers can be checked. A ball is hoisted on the roof of the Levy building at 10 h. 55 m. a.m., and dropped at 11 h. 0 m. a.m., standard time of the 90th meridian west longitude, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 22 h. 41 m. 29.7 s. local mean time.

Pilotage.—Pilots are usually in waiting outside to take charge of vessels crossing the bar. If drawing less than 25 ft. they can generally proceed without difficulty, if tide and weather are favourable. For vessels not exceeding 500 tons net reg., 3 dols. per foot draught; over 500 and not exceeding 1,000 tons, 3 dols. 50 c. per foot draught; over 1,000 and not exceeding 1,500 tons, 3 dols. 75 c. per foot draught; over 1,500 tons, 4 dols. per foot draught. These charges are payable each way, in and out of port. Inward pilotage begins from a distance within ten miles from the outer end of the jetties, to any place in Galveston Bay or harbour where vessels require to be anchored or moored.

Port Charges.—Tonnage Dues.—See **United States. Port-warden's Fees:**—For inspecting hatches, 7 dols. **Stevedore:**—Loading cotton screwed, 40 c. per bale; hand-stowed, 18 c. to 20 c. per bale; oilcake and C.S. meal, 30 c. per ton; trimming, grain, 1½ dols. per 1,000 bushels. Discharging steel rails, 35 c. per ton. Longshore labour from 7 a.m. to 6 p.m., 40 c. per hour; for night work 60 c. per hour; for Sundays and holidays 80 c. per hour. Vessels are not allowed to work with their own crews. **Water:**—100 cubic ft., 2 dols.; 200, 3 dols.; 300, 3 dols. 80 c.; 400, 4 dols. 40 c.; 500, 5 dols. **Custom House Expenses:**—5 dols. and 10 dols. When vessels arrive from infected ports a charge of 50 dols. is made for fumigating and disinfecting. **Provisions:**—Beef, 7 c. per lb. at wharf. **Lumber for lining purposes,** 16 dols. and 18 dols. per 1,000 ft.

Pro Forma Charges on a steamer of 7,355 tons gross (4,776 tons net), loading a full cargo of cotton and general merchandise:—

PORT CHARGES.

	Dols. c
Entry 3 dols. 37 c.; clearance, 4 dols. 90 c.	8 27
Consular fees	6 40
Tonnage dues	411 42
Quarantine dues	15 00
Pilotage, in, over 1,500 tons 4 dols. per foot.	62 00
Pilotage, out, over 1,500 tons 4 dols. per foot	94 00
Towage	70 00
Running lines	20 00
Watchman on ship	42 50

Dols.	c.	£	s.	d.
729	59	=	150	2 5

The United States—Galveston (continued).

CARGO EXPENSES.

	Dols.	c.	Dols.	c.	£	s.	d.
Brought forward					150	2	5
Stowing 16,939 square b/c at 20 c.	3,387	80					
„ 1,601 round b/c at 10 c.	160	11					
„ 1,866 tons cottonseed meal at 35 c.	653	10					
Heading 6,230 b/c at 2 c.	124	60					
Shed hire	150	00					
Cotton inspection	44	34					
Watchman on quay	83	00					
Brokerage on cotton	392	11					
Tally clerks	145	00					
			5,140	06			
					1,057	12	6

SUNDRIES.

Cables and telegrams	75	00					
Petty expenses	25	00					
Orders at Sand Key	4	40					
Medical attendance	15	00					
Laundry bill	34	25					
Insurance on inland charges	132	00					
			285	65		58	15
						6	
			6,155	30		1,266	10
						5	

GLOUCESTER.

Gloucester, in lat. 42°38' N., long. 70°39' W., is situated on the S. side of Cape Ann, about 28 miles N.E. of Boston.

Population.—About 27,000.

Imports.—Salt, lumber, etc.

Export.—Fish.

Accommodation.—The harbour is safe and deep enough to admit vessels of the largest size. There is a depth at high water in the outer harbour of about 32 ft., and in the inner harbour of about 19 ft.; depth at highest springs 29 ft., and at lowest springs, 18 ft. There is good wharfage accommodation.

Pilotage.—Compulsory. Vessels drawing 7 ft. in or out, 2 dols. 64 c.; 8 ft., 2 dols. 69 c.; 9 ft., 2 dols. 73 c.; 10 ft. 2 dols. 77 c.; 11 ft., 2 dols. 80 c.; 12 ft., 2 dols. 85 c.; 13 ft., 2 dols. 95 c.; 14 ft., 3 dols. 45 c.; 15 ft., 3 dols. 50 c.; 16 ft., 3 dols. 55 c.; 17 ft., 3 dols. 75 c.; 18 ft., 3 dols. 80 c.; 19 ft., 4 dols.; 20 ft., 4 dols. 25 c.; 21 ft., 4 dols. 50 c.; 22 ft., 4 dols. 50 c., and 25 c. extra for every additional foot.

Port Charges.—Towage:—Vessels of 300 tons and upwards: Wharf to sea, 25 dols.; stream to wharf, 10 to 20 dols. **Boat Hire:**—3 dols. per day. **Tonnage Dues:**—6 c. per ton. **Entrance Fees:**—Vessels under 100 tons, 1 dol. 50 c.; over 100 tons, 2 dols. 50 c. **Mooring:**—5 dols. **Clearance Fees:**—Vessels up to 100 tons, 1 dol. 50 c.; over 100 tons, 2 dols. 50 c. **Ballast:**—Rocks, 1 dol. 25 c.; sand, 1 dol. per ton. **Labour:**—30 c. per hour. **Brokerage:**—50 dols. **Wharfage:**—Free while vessels are discharging; afterwards, 75 c. per day; over 200 tons, ½ c. per ton in addition. Vessels taking in ballast, 20 c. per ton of ballast.

GRAY'S HARBOUR.

Gray's Harbour is in lat. 47°0' N., long. 124°0' W.

Exports.—Lumber, laths, and shingles.

Accommodation.—This is an inlet of the Pacific Ocean, about 54,000 acres in extent. The small towns of Hoquiam, Aberdeen, Cosmo-

The United States—Gray's Harbour (continued).

polis, and Montesano are situated upon it. There is no settlement of importance with the name Gray's Harbour. The entrance to the harbour is about $\frac{3}{4}$ of a mile wide, and 100 ft. deep at the throat. This entrance is obstructed by a shifting bar three miles out in the ocean, the depth of water ranging from 20 to 26 ft. at high tide. For 10 miles east of the throat of the harbour there is a depth of 30 ft. at low water, when shoals are found running about 18 ft. at extreme low tide. These shoals are plainly marked, and when passed, 24 ft. to 30 ft. of water is found for a distance of some 4 miles above Aberdeen. Rise of tide about 8 ft. at Aberdeen. There are docks, wharves, etc. The wharfage of the harbour is as follows:—Hoquiam 2,200 ft., Aberdeen 8,850 ft., Cosmopolis 1,400 ft. The United States Government have built a system of jetties at the mouth of the harbour, that has deepened the water on the bar from 2 to 4 ft. Further improvements are to be made which will give a depth of 22 ft. from the ocean to the Chehalis River. Vessels are now loading to 19 ft. 6 in., and in good weather could load to 21 ft. with safety. There is a wooden marine way with a lifting power of 1,500 tons. Repairs can be executed.

Pilotage.—Not compulsory. Steamers of over 800 tons, to or from Hoquiam or Aberdeen over the bar or from within the bar to the open sea, 5 dols. per foot draught, and 2 c. per ton gross reg. each way. (This charge includes the use of a tug for the purpose of having the vessel taken to any wharf or dock in Gray's Harbour, or the Chehalis River below the wagon bridge at Aberdeen.) Steamers of 700 tons and under 800, pilotage only, in and out 100 dols.; over 500 and under 700 tons, 75 dols. in and out. Vessels going to Hoquiam or Wishkah Rivers, or Chehalis River above the bridge, by arrangement.

Towage:—Sailing vessels, in and out over Gray's Harbour bar, and taking to one wharf or dock within Gray's Harbour, 50 c. per gross reg. ton; moving from dock or wharf to dock or wharf, according to distance, and whether or not the vessel is loaded.

Port Charges.—Entrance Fees:—2 dols. 70 c. **Brokerage:**—25 dols.

GULFPORT.

Gulfport, in lat. $30^{\circ}22'$ N., long. $89^{\circ}5'$ W., is situated on the Gulf of Mexico, about midway between New Orleans and Mobile, 12 miles north $41^{\circ}30'$ W. of Ship Island Lighthouse.

Population.—9,500.

Imports.—Rails, cement, pyrites, and rock phosphate.

Exports.—Lumber, naval stores, etc.

Accommodation.—The harbour is $\frac{1}{4}$ of a mile wide, and $\frac{1}{2}$ a mile long, and the ballast cribs pier $\frac{1}{2}$ a mile long. Depth of water at high tide 23 ft., and at low tide 21 ft. 6 in.

The deep water on the north-west of Ship Island extends 5 miles in shore, from which a 7 mile channel, 310 ft. wide and 23 ft. deep, has been dug to the docks and anchorage basin at Gulfport, the direction of the channel being north $41^{\circ}30'$ W., and is plainly marked by the U.S. Government with three red beacons 75 ft. east of the eastern edge of the channel, buoys plainly marking the channel from the Gulf to Ship Island harbour.

The channel is lighted at night by the United States Government.

The United States—Gulfport (*continued*).

The U.S. Government has dredged the channel over Ship Island bar to a depth of 24 ft., and vessels of that draught can enter Ship Island harbour and proceed to Gulfport at average high tide.

Steamers can proceed from the sea to Gulfport without the assistance of a tug when their draught does not exceed 17 ft. Tram cars run along the pier for delivering supplies, etc., alongside vessels.

Pilotage.—Compulsory. 3 dols. 50 c. per foot both inwards and outwards. Pilots can usually be found outside Ship Island.

Port Charges.—**Mooring** :—10 dols. per vessel.

Tonnage Dues :—See **United States. Boat Hire** :—2 dols. per day.

Ballast :—20 c. per ton. **Labour** :—25 to 50 c. per hour. **Agency Fee** :—Usually £10 5s. **Towage** :—From sea to docks and back to sea 20 c. per net reg. ton.

Pro Forma Charges on a steamer of 2,000 tons reg., ballast in and cargo out, drawing 20 ft. loaded :—

	Dols.	c.
Tonnage dues at 3 c. per ton	60	00
Agency fee	49	20
Pilotage in, 16 ft., 56 dols.; out, 20 ft., 70 dols.	126	00
Towage	200	00
Boat hire, 2 dols. per day (say 9 days)	18	00
Harbour master's fee	15	00
Tram car hire for master, etc.	5	00
Other expenses	15	00
	488	20 = £100 9s. 0d.

HUMBOLDT BAY.

Humboldt Bay is in lat. 40°45' N., long. 124°6' W.

Population.—10,000 (Eureka).

Imports.—General merchandise and coal.

Exports.—Lumber and dairy products.

Accommodation.—The bay is 14 miles long, and has a varying width of $\frac{1}{2}$ to 4 miles. Its tidal area is about 28 sq. m., and it has 35 miles of navigable channels, and an available water frontage of fully 50 miles. The entrance is about 2,100 to 3,000 ft. wide between the jetties.

There is a depth of water at the entrance at low tide of from 27 to 31 ft. at the shallowest spots. There is from 20 to 30 ft. of water at low tide in the channels of the bay up to the city of Eureka, which is 6 miles from the entrance. Vessels drawing 21 ft. of water can load in Humboldt Bay, and pass out over the entrance. Steamers pass in and out of Humboldt Bay without pilot boats. Sailing vessels are towed in and out by private tugboats.

The bay is surrounded on all sides by high lands, and vessels ride in absolute safety from storms at all seasons of the year.

Wharves and piers are owned by private parties, and usually no charge is made for wharfage.

Water is abundant, good and cheap, as are all general provisions.

Tonnage Dues.—See **United States**.

The United States.

JACKSONVILLE (Florida).

Jacksonville, in lat. 30°21' N., long. 81°45' W., is on the St. John River.

Population.—47,000.

Imports.—General merchandise.

Exports.—Lumber, fruit, naval stores, and phosphate.

Accommodation.—There is 27 ft. on the bar at high water ; tides rise 4 to 6 ft. At low water there is in the harbour 60 ft., and at the wharves 15 to 25 ft. Anchorage good and safe, bottom sand. There is a dry dock 260 ft. long on the blocks, 75 ft. wide at the entrance at high spring level, 19 ft. on the sill at high springs, and with a lifting power of 4,200 tons. There are two patent slips ; No. 1 is 200 ft. long (cradle), 10½ ft. on blocks at high springs, and with a lifting power of 1,200 tons. No. 2 is 140 ft. long (cradle), and has a lifting power of 300 tons. Repairs can be executed, and there are sheer legs to raise 50 tons.

Pilotage.—Compulsory. Inwards, 2 dols. 50 c. per foot ; outwards, 3 dols.

Port Charges.—Towage:—From sea to harbour, and back to sea, 30 c. per thousand feet on outward cargo. **Port-warden's Fee:**—Examining hatches, 5 dols. **Loading Lumber:**—Sailing vessels, 55 c. per 1,000 for single deck ; 60 c. for double deck, with 2½ c. additional for poop-deck vessels. Steamers, 1 dol. per 1,000 for day work ; 1 dol. 25 c. per 1,000 for night work ; steamers to furnish free steam gear and winchmen. Donkey engine and man for discharging general cargo, 10 dols. per day. **Labour:**—1 dol. 50 c. per day. **Commission:**—On freight, 2½ per cent. ; disbursements, 2½ per cent.

KEY WEST.

Key West is in lat. 24°28' N., long. 81°50' W.

Population.—20,498.

Imports.—Tobacco and fruit.

Accommodation.—Vessels of 30 ft. can enter the harbour, and those drawing 25 ft. can lie alongside the wharf. Average rise and fall of the tide, about 2½ ft. Wharfage and warehouse facilities are good. There is a bow and stern Government dry dock, but it is in bad repair. There is a patent slip capable of taking vessels of 1,000 tons. The U.S. Government have a Navy Yard here. Coal can be obtained.

Time Signals.—Chronometers can be checked. A ball is dropped on the flagstaff of the roof of the Equipment building at noon mean time of the meridian of 75° W. long., equal to 5 h. 0 m. 0 s. Greenwich mean time, and 23 h. 32 m. 46.4 s. local mean time.

Pilotage.—Compulsory. For sailing vessels and steamers, as follows :—

		Per ft. Dols.
Drawing	6 ft. or less	2
"	6 ft. to 10 ft.	3
"	10 ft. „ 14 ft.	4
"	14 ft. „ 20 ft.	5
"	over 20 ft.	6

All vessels drawing 14 ft. or less pay 10 dols. for dropping from one

The United States—Key West (continued).

anchorage to another; and those drawing over 14 ft. pay 20 dols. If a pilot is detained on board after completing pilotage he is paid 5 dols. per day.

Port Charges.—Entrance Fees:—2 dols. 50 c. If in ballast, an additional 67 c. is charged; if with cargo, an additional 3 dols. **Permits:**—20 c. each. **Wharfage:**—1 c. per reg. ton per day. **Boat Hire:**—6 dols. to 10 dols. per day, or 2 dols. per launch. **Clearance Fees:**—2 dols. 50 c. **Bill of Health:**—20 c. **Labour:**—40 c. per hour, or 3 dol. 20 c. per day. **Ballast:**—1 dol. per ton. **Brokerage:**—25 dols. average, except 10 dols. delivering orders to vessels. **Tonnage Dues:**—U.S. Custom House regulate by five trips per year, and from 3 c. to 6 c. per net ton.

MOBILE.

Mobile, in lat. 30°40' N., long. 88°6' W., stands at the head of the bay of the same name.

Population.—42,900.

Imports.—Asphalt, bananas, cocoanuts, sisal grass, hard wood, sulphur ore, creosote, etc.

Exports.—Breadstuffs, coal and coke, cotton and cotton products, lumber, timber, manufactured goods, live stock, naval stores, staves, etc.

Accommodation.—In ordinary weather vessels of 27 ft. draught can cross the bar at high water. Vessels drawing up to 23 ft. are safe at all times in the river and at the wharves. The bay is well sheltered from all winds. The bottom of the outer bar consists of hard sand. There is 2½ miles of wooden wharfage with from 16 to 23 ft. alongside at high tide. There is a floating five-sectional dock, 225 ft. long, 40 ft. wide at the entrance, and 8½ ft. on the sill, with a lifting power of 500 tons. This dock is in bad repair. The dry dock is 300 ft. long, 40 ft. wide at the entrance, and 15 ft. on the blocks. Of the four patent slips one is 340 ft. long (cradle), with a lifting power of 3,500 tons; the other three raising 1,000, 500, and 420 tons respectively. There is a 5 ton crane on the wharf.

Pilotage.—Each way. Vessels up to 9 ft., 2 dols. 50 c. per foot; 9½ to 10½ ft., 3 dols. per foot; 11 to 12 ft., 3 dols. 25 c. per foot; 12½ to 14 ft., 3 dols. 50 c. per foot; 14½ to 20 ft., 5 dols. per foot; 20½ ft. and over, 6 dols. per foot; when towed, 50 c. per foot additional.

Port Charges.—Discharging Cargo:—30 c. per ton. **Loading:**—Timber, 75 c. per load; lumber, 90 c. per 1,000. **Compressing:**—50 c. per bale of cotton. **Stevedore:**—35 c. per bale cotton. **Towage:**—10 c. per net reg. ton, from city to sea; 30 dols. per shift. **Harbour-master's Fee:**—10 dols. per shift. **Tonnage Dues:**—See **United States.** **Boat Hire:**—About 5 dols. **Consular Fees:**—About 4 dols.

Pro Forma Charges on a steamer of 2,000 tons reg., ballast in, and timber out, drawing 22 ft. loaded:—

	Dols.	c.
Pilotage in, 12 ft. at 3 dol. 25 c. per ft.	39	00
„ out, 20 ft. at 5 dols.	100	00
Towage, 10 c. per net reg. ton	200	00
Mooring and unmooring	60	00
Boat hire	5	00
Customs charges in and out	6	00
Consular fees	4	00
Stevedore, 1,125 stds. at 75 c. per load (3,712 loads)	2,784	00

3,198 00 = £658 0s. 6d.

The United States.

MONTEREY.

Monterey harbour is in lat. $36^{\circ}38'$ N., long. $121^{\circ}54'$ W.

Population.—About 2,500.

Imports.—Lumber and general merchandise.

Exports.—Crude petroleum, grain, dairy produce, honey, apples, etc.

Accommodation.—The anchorage is in 10 fathoms, about half a mile from the town, and is perfectly safe, the bottom being firm sand. The harbour is thoroughly protected from southerly winds. In summer the N.W. gales sometimes cause a swell that creates a strong undertow, inconveniencing vessels at the wharves, but not affecting those further out at anchor. Vessels should be well found in cables and anchors. There are two wharves, each about 700 ft. long, with a berth on each side about 120 ft. long. Depth at low water alongside, 26 to 28 ft. These wharves are not of sufficient length to take the full lengths of large ships, but are fitted with complete sets of bow and stern and breast moorings, consisting of iron buoys anchored. Rise and fall of the tide is about 6 ft.

This is a sub-port of entry in the Customs district of San Francisco.

Port Charges.—**Customs Charges** :—See **San Francisco.** **Wharfage** :—Vessels up to 500 tons, 2 c. per ton. **Boat Hire** :—25 c. per man. **Ballast** :—1 dol. per ton. **Labour** :—2 dols. 50 c. per day.

MT. DESERT FERRY.

Mt. Desert Ferry, in lat. $44^{\circ}30'$ N., long. $68^{\circ}20'$ W., is a sub-port situated in Frenchman Bay, 14 miles from Ellsworth, and is the terminal of the Maine Central Railroad.

Accommodation.—Steamers of 25 ft. draught can come within a quarter of a mile from the wharf. There is a depth alongside the wharf of 10 ft. at low water, and 22 ft. at high water, soft bottom. Vessels may enter and clear at this port as well as at Ellsworth.

Pilotage.—There is no regular tariff, the charge being according to agreement.

Port Charges.—**Entrance and Clearance Fees** :—See **United States.** No harbour or wharf dues.

NANTUCKET.

Nantucket is in lat. $41^{\circ}16'$ N., long. $70^{\circ}13'$ W.

Population.—3,500.

Accommodation.—The harbour is on the N. side of the island, and is almost land-locked. At low water there is only 7 ft. of water on the bar; mean springs rise 3 ft.; neaps, 2 ft. There is 10 ft. of water alongside the wharves.

Pilotage.—Not compulsory. 1 dol. per foot.

NEW BEDFORD.

New Bedford is in lat. $41^{\circ}37'$ N., long. $70^{\circ}57'$ W.

Population.—79,078.

The United States—New Bedford (continued).

Imports.—Lumber, mill machinery, and salt.

Exports.—Sperm and whale oil.

Accommodation.—Vessels drawing 21 ft. can enter at high water. A new channel is now being dredged to a depth of 28 ft. There is good wharfage accommodation. There are three patent slips to raise 200, 500, and 1,000 tons respectively.

Pilotage.—Compulsory. 2 dols. 50 c. per foot.

Port Charges.—**Wharfage** :—10 c. per ton d.w. **Entrance Fees** :—5 dols. 50 c. **Clearance Fees** :—2 dols. 50 c. **Towage** :—As per agreement. **Ballast** :—1 dol. per ton. **Labour** :—1 dol. 50 c. per day. **Quarantine Physician's Fee** :—5 dols. **Water** :—1 dol. 50 c. per 1,000 gallons.

Pro Forma Charges on a steamer of 1,891 tons reg., cargo of general merchandise in, and ballast out, drawing 21 ft. loaded :—

	Dols.	c.
Harbour dues at 6 c. per reg. ton	113	46
Pilotage in and out	105	00
Towage in and out	60	00
Entrance fees	5	50
Clearance fees	2	50
	<hr/>	
	286	46 = £58 18s. 10d.

NEWBURYPORT.

Newburyport, in lat. 42°48' N., long. 70°51' W., is about 33 miles N.E. of Boston, on the right bank of the River Merrimac.

Population.—About 15,500.

Accommodation.—The bar is continually changing, so that the services of a pilot are necessary. There is 7½ ft. of water on it at low tide ; springs rise about 10 ft. The town of Newburyport is about 3 miles from the entrance. During easterly gales the bar is impassable. The usual draught of vessels coming here is 11 ft. There is a patent slip.

NEWHAVEN.

Newhaven, in lat. 41°20' N., long. 72°55' W., is situated on an inlet on the north coast of Long Island Sound.

Population.—121,230.

Imports.—Lumber, steel billets, sugar, molasses, salt, and coal.

Accommodation.—Vessels can enter the anchorage basins with draught of 23 ft. at high tide, and 17 ft. at low tide ; ordinary rise and fall of tides, 6½ ft. There are good wharves alongside which vessels of 18 ft. and up to 22½ ft. draught can discharge ; they touch the bottom at low water, which is, however, composed of soft mud, so that no danger is sustained by vessels grounding. Vessels of 20 ft. draught can get up to the city ; and those drawing 23 ft. can get to the upper harbour at high water. The principal discharging berth for coal has a depth of 22½ ft. alongside at high water.

Pilotage.—Compulsory. Vessels drawing 9 ft., 75 c. per foot ; 9 to 12 ft., 1 dol. per foot ; 12 to 14 ft., 1 dol. 50 c. per foot ; 14 ft. and upwards, 1 dol.

The United States—Newhaven (continued).

Port Charges.—Wharfage:—1 c. per ton per day, or fraction thereof. **Towage:**—About 2 c. per ton for cargoes of 500 tons and upwards. **Ballast:**—From 75 c. to 1 dol. per ton alongside. **Labour:**—30 c. per hour. **Brokerage:**— $2\frac{1}{2}$ to 5 per cent. on steamers. **Custom House Entrance and Clearance:**—10 dols. **Discharging:**—20 c. per ton. **Medical Visit:**—5 dols. **Tonnage Dues:**—See **United States**. **Coal:**—Delivered on board about 4 dols. 50 c. per ton. **Water:**—Pumped on board, 2 dol. 50 c. per 1,000 gallons.

Pro Forma Charges on a steamer of 2,000 tons reg., with a cargo of coal in, drawing 22 ft. loaded:—

	Dols.	c.
Custom House brokerage	10	00
Pilotage in	44	00
Pilotage out	12	00
Towage, assistance at dock and attendance in and out of harbour	75	00
Wharfage, 1 c. per ton per day, say 5 days	100	00
Medical visit	5	00
	246	00 = £50 12s. 6d

Discharging is now paid by consignees.

NEW LONDON.

New London, in lat. $41^{\circ}21' N.$, long. $72^{\circ}8' W.$, is the easternmost harbour on the N. shore of Long Island Sound.

Population.—20,000.

Accommodation.—The harbour is formed by the mouth of Thames River. Vessels of the deepest draught can lie at anchor in Fishers Island Sound, just outside the inner harbour, and vessels drawing 30 ft. can find safe anchorage in the inner harbour. Tides rise and fall $2\frac{1}{2}$ ft. Vessels drawing from 12 to 21 ft. can go alongside the wharves, and those drawing 30 ft. can go up to the U.S. naval and coaling station, $2\frac{1}{2}$ miles further up the river. Good anchorage and shelter may be obtained abreast the town, in 4 to 10 fathoms, soft bottom. Vessels drawing 14 ft. can go up the river as far as Norwich, a distance of 15 miles. There are three patent slips to raise 2,500, 1,000, and 800 tons respectively. Small repairs are executed. There are sheers to lift 35 tons.

Pilotage.—Not necessary.

Port Charges.—Entrance Fees:—3 dols. **Clearance Fees:**—3 dols. **Tonnage Dues:**—See **United States**. **Quarantine Dues:**—5 dols. **Labour:**—1 dol. 25 c. to 1 dol. 75 c. per day.

NEW ORLEANS.

New Orleans, in lat. $29^{\circ}58' N.$, long. $90^{\circ}2' W.$, is situated on the E. bank of the Mississippi River, about $112\frac{1}{2}$ miles from the delta. Distance by sea to Liverpool, 4,480 miles.

Population.—About 350,000.

Imports.—Burlaps, coffee, all kinds of oil, fruit, sisal grass, nitrate of soda, sugar, etc.

Exports.—Corn and grain, flour, cotton, cotton-seed products, lumber, rice, oak staves, lard, canned meat, furs, etc.

Accommodation.—At the passes there is a sufficient depth of

The United States—New Orleans (continued).

water to admit the largest steamers. There is 26 to 27 ft. at the entrance, and from 20 to 30 ft. alongside the wharves.

The following are the floating docks :—

Dock.	Length in feet over all.	Width of En- trance at high spring level in feet.	Depth on the Sill at high springs in feet.	Lifting Power in tons.
Marine Floating	220	67	15	1,200
Ocean "	200	60	14	1,000
New "	332	74	22	5,000
Wood's "	80	40	10	—

The facilities for loading are excellent. The wharves extend for 7 miles on both sides of the river, of which 6 miles are covered with modern equipments for the expeditious handling of goods. There are five grain elevators. Repairs are undertaken.

Plans for the improvement of the Federal quarantine station at the mouth of the Mississippi River are now being made.

Time Signals.—Chronometers can be checked. A ball is hoisted 15 minutes before the signal on the roof of the Sugar Refining building and dropped at noon mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 22 h. 59 m. 43 s. local mean time.

Pilotage.—**Bar Pilotage** :—Rates for bringing a vessel from the mouth of the river to berth alongside the quay; $4\frac{1}{2}$ c. per ton, and the same amount for taking her over the bar out to sea. The same rate is charged by pilots belonging to the New Orleans Bar Pilots' Association for guiding vessels from the sea up to the city quays. **River Pilotage** :—20 dols. each way.

Port Charges.—**Towage** :—Sailing vessels of 200 tons or under, 60 c. per ton, graduated to 40 c. per ton for sailing vessels of 1,000 tons or over; steamers, moving in port, rates according to distance, from 25 dols. to 65 dols.

Wharf Dues :—On all sea-going vessels, for the use of the wharves 2 c. per ton per day, based upon the gross tonnage, for the first three days, and the sum of 1 c. per ton per day for the next three ensuing days, making a maximum charge of 9 c. on the gross tonnage for the first six days, and thereafter a vessel shall be free from any charge for a period of 30 days. There is no wharfage charge whatsoever on merchandise landed at the wharves and landing, either import or export. **Harbour Dues** :—Ten dols. on vessels arriving in ballast, and a further charge of 5 dols. for vessels with general cargo.

Port-warden :—Certificate of storage, steamers, 5 dols. **Stevedore Charges** :—Cotton, per bale, 30 c. to 35 c. General cargo, 30 c. to 40 c. per ton. **Grain Charges** :—Trimming, per 1,000 bushels, 1 c. to 1 dol. 15 c. Extra for sacking. **Tonnage Dues** :—6 c. per ton. Provisions and stores at moderate prices.

Pro Forma Charges on a steamer of 2,677 tons net reg. :—

River pilotage, up	Dols.	c.
" " down	29	75
Bar pilotage, inwards	32	63
" " outwards	64	00
Entry at Custom House	87	00
Clearance at Custom House	2	00
	2	70

Carried forward 218 08

The United States—New Orleans (continued).

	Dols.	c.
Brought forward	218	08
British Consul's fees	1	90
Ship-chandler	309	30
Doctor's account	37	00
Labour	2,050	20
Towage	180	00
Watching cargo	100	00
Tarpaulin	75	00
Postage and petties	10	00
Gear and superintendence at 3 c. per 2,972 tons	89	16
Cables and telegrams	15	00
Drayage	20	00
Tallyman	30	00
Freight brokerage	135	44
Dunnage wood	12	50
Re-marking cotton	6	09
Harbour dues and wharfage	314	57
	3,604	24 = £741 12s. 3d.

NEWPORT.

Newport, in lat. 41°29' N., long. 71°19' W., is situated at the entrance of Narraganset Bay, on the S.E. side of Rhode Island. Climate very healthy.

Population.—25,560.

Accommodation.—This port is capable of admitting vessels of the largest tonnage. About half a mile from the town there is excellent anchorage in 5 to 7 fathoms, while vessels of 18 ft. draught can lie close to the pier at low water. Springs rise 4½ ft.; neaps, 4 ft.

Time Signals.—Chronometers can be checked. A ball is dropped at noon mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 0 h. 14 m. 41.4 s. local mean time. The signal is made from the Machine Shop at the Torpedo Station.

Pilotage.—Compulsory; inwards, 1 dol. 25 c. to 3 dols. 50 c. per foot of water; winter, 50 c. extra; outwards, 1 dol. to 1 dol. 50 c.

Port Charges.—**Labour:**—1 dol. 50 c. to 2 dols. per day. **Water:**—1 dol. 50 c. per 1,000 gallons on board. **Stevedore:**—Discharging coal 20 c. per ton.

NEWPORT NEWS.

Newport News, in lat. 36°59' N., long. 76°22' W., is situated on the northern shore of Hampton Roads, 9 miles from Fortress Monroe, and 2 miles due west of Cape Henry.

Population.—28,750.

Exports.—Coal, flour, grain, cotton, tobacco, timber, and staves.

Accommodation.—The harbour is land-locked, commodious, and safe. Depth of water off piers, 60 ft., good anchorage. Depth of water in loading berths at piers, 27 to 35 ft. at low water. There are two wooden dry docks and a patent slip:—

Dry dock No. 1 is 602 ft. long over all, 82½ ft. wide at entrance high spring level, and 25 ft. on the sill.

Dry dock No. 2 is 785 ft. long over all, 103½ ft. wide at entrance coping level, and 30 ft. on the sill.

The patent slip will lift 2,000 tons. There is an electric crane, owned by the Dry Dock Company, to raise 125 tons.

Communication by ferries with Norfolk, 12 miles distant.

The United States—Newport News (*continued*).

Regular lines of steamers ply between Newport News and New York, Boston, Providence, Liverpool, and London.

Repairs can be executed at the Newport News Shipbuilding and Dry Dock Company's works at reasonable prices. Supplies of all kinds readily obtainable.

This is a coaling station for steamers. Coal of the best quality is furnished at moderate prices. There are forty-two chutes, each with a delivery capacity of 100 tons per hour, and 2,350 ft. of coal piers.

There are two grain elevators, one capable of lifting 200,000 bushels and the other 100,000 bushels per day of 10 hours. Their respective capacities are 1,750,000 and 1,250,000 bushels. In addition there are six merchandise piers with a total length of 3,200 ft.; with an electric 30 ton crane on pier No. 8.

Newport News is the Atlantic terminus of the Chesapeake and Ohio Railway.

Time Signals.—Chronometers can be checked. A ball is hoisted on a flagstaff on the roof of Sigsby building at 11.55 a.m. and dropped at noon standard time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 23 h. 54 m. 16.4 s. local mean time. This signal is unreliable.

Pilotage.—Masters of vessels inward bound from sea other than those engaged in coastwise traffic or made exempt by United States statutes must take the first Virginia pilot that offers his services, from Cape Henry, bearing west of south, to Smith's Point, Yorktown, Newport News, or Norfolk, or any intermediate point. Masters of vessels outward bound must take the first Virginia pilot that offers his services at Smith's Point, Yorktown, Newport News, or Norfolk, or any intermediate points to the sea. Shipmasters coming from sea are not compelled to take a pilot after arriving within the line at which Cape Henry bears south. A shipmaster may pilot his own vessel to Hampton Roads or York Spit light, and then employ any steam-boat or tow-boat to tow his vessel to her port of destination, but must not employ any steam-boat or tow-boat below Hampton Roads or York Spit light without paying full pilotage to the first regular pilot that offers his service to the vessel. Shipmasters requiring pilots should signal at the foremast or foretopmast head. Pilotage rates: Vessels bound from sea to Smith's Point, West Point, Newport News, Norfolk, or any place between Smith's Point, West Point, Newport News, or Norfolk, if boarded or spoken eastward of Cape Henry bearing south, drawing under 8 ft., 2 dols. per foot; 8 ft. and under 10, 2 dol. 50 c. per foot; 10 ft. and under 13, 3 dols. 50 c. per foot; 13 ft. and under 16, 4 dols. per foot; 16 ft. and under 20, 4 dols. 50 c. per foot; 20 ft. or over, 5 dols. per foot. Vessels boarded or spoken 20 miles eastward of Cape Henry, pay 25 c. per foot extra. Pilotage out to sea, same rates as above. Rate from Newport News to any point on James River, or from any point on James River to Newport News, 1 dol. 50 c. per foot (optional). Vessels coming from sea to Hampton Roads, and then to any port in Maryland are subject to the same rate as vessels bound from Newport News to sea. Vessels coming into Hampton Roads seeking, in ballast, pay the same rate of pilotage as vessels calling for the sole purpose of coaling, provided that if such vessels are afterwards chartered to load in any port they pay

The United States—Newport News (continued).

the usual pilotage in and out. Steamers calling at any port for the sole purpose of coaling, pay 1 dol. less per foot than the regular rate under 10 ft. ; vessels drawing 10 ft. and under 20, 1 dol. 50 c. per foot less than the regular rates ; and vessels drawing 20 ft. and over, 2 dols. less per foot than the regular rates. All vessels having paid inward pilotage that go from Norfolk to Newport News, or from Newport News to Norfolk, to load or finish loading, if they take pilot, pay 10 dols. for transporting vessels between the ports. In all cases where pilotage is optional none but licensed Virginia pilots may be locally employed.

Port Charges.—Wharfage Charges :—Same as Norfolk. **Quarantine Dues :**—7 dols. **Harbour-master's Fee :**—Steamers, 10 dols. ; sailing vessels, 5 dols. **Towage :**—1 c. per reg. ton with, and 1½ c. per reg. ton without, vessel's steam. **Stevedore :**—General merchandise, 25 c. to 50 c. per ton ; grain, 3 dols. per 1,000 bushels bulk ; bag sewing, 5 dols. per 1,000 bushels ; bag stowing, 5 dols. 50 c. per 1,000 bushels.

Pro Forma Charges on a steamer of 3,168 reg. tons, arriving at Newport News, and leaving for England :—

	Dols.	c.
Advertising	15	00
Cables and telegrams	33	72
Cash to master	100	00
Clerking	245	25
Coal	2,734	73
Commission on inward freight	45	04
Commission on outward freight	354	70
Consular fees	8	80
Cooper	30	35
Custom House	12	40
Druggist	1	80
Doctor	16	00
Extra labour	108	95
Freight brokerage	90	52
Grain fittings	255	66
Pilotage, inward	59	33
Pilotage, outward	130	00
„ transfer	10	00
Postage and petties	17	50
Protest	1	75
Provisions	103	94
Quarantine permit	7	00
Running lines and launch hire	13	00
Shifting and trimming coal	100	10
Shipping fees	117	50
Shipsmith, etc.	31	76
Spouting and trimming grain	243	00
Surveyor	20	00
Stevedore, inward	276	45
Stevedore, outward	950	61
Tonnage tax	287	10
Towage	135	00
Water	4	03
Wharfage	221	76

6,782 75 = £1,395 12s. 4d.

NEW YORK.

New York, the commercial capital of the United States, is situated at the mouth of the Hudson River, in lat. 40°42' N., long. 73°55' W. Distance from Liverpool 3,016 miles.

Population.—4,113,050.

Imports.—Chemicals, cocoa, copper, hides and skins, indiarubber

The United States—New York (continued).

raw silk, tea, tin, automobiles, bread-stuffs, cotton goods, fruits, furs, iron and steel, leather, oils, silk goods, sugar, tobacco, wool, etc.

Exports.—Agricultural implements, cattle, bread-stuffs, chemicals, coal, copper, cotton, fruits, manufactures of iron and steel, leather, oils, provisions, tobacco, wood, etc.

Accommodation.—The port of New York also includes Bayonne, Communipaw, Jersey City, Hoboken, and Weehawken, on the New Jersey side of the Hudson River, the whole embracing an immense water front.

The harbour is landlocked on every side, the most perfect protection is afforded to shipping. There are piers for shipping on the west and on the east side of the city. These piers or wharves are mainly the property of the Corporation, and under the control of the Common Council of the city. They are mostly constructed of wood, but are being replaced gradually by steel and concrete structures; many of them are covered over for the protection of cargo, thus enabling loading and discharging in bad weather.

The piers in Brooklyn are mostly owned by Warehouse Companies, and those on the New Jersey side are under control of the several Railroad Companies, having terminals at the several points.

There is sufficient water at the greater number of these piers for vessels of the deepest draught. Vessels drawing 27 to 28 ft. can enter the harbour at low water; at high water the bar at Sandy Hook has $32\frac{1}{2}$ to 33 ft. at spring tides. Through the Ambrose Channel there is 35 ft. of water at mean low water.

In the case of steamers inward and outward bound, the channels in the lower bay are well buoyed, and a captain who has arrived here before, via Sandy Hook, would have very little trouble reaching upper quarantine, from where a tugboat usually assists in shifting and docking other than regular line steamers.

The following are the floating and sectional docks:—

Dock.	Length over all in feet.	Width of Entrance at high spring level in feet.	Depth on Sill at high water springs in feet.	Lifting Power in tons.
J. Shewan & Son, Floating . . .	276	87	25	3,500
" " . . .	180	61	16	1,000
" " . . .	160	61	16	800
" " . . .	240	81	22	2,500
J. Tregarthen & Co., Sectional . . .	175	63	15	1,000
" " " . . .	256	85	22	3,000

SUGGESTIONS TO MASTERS BOUND TO NEW YORK.

Manifests of cargo on board, with list of stores, should be made out before entering port.

No one other than the pilot should be allowed on board before the vessel receives a visit from the health officer; but in case vessels anchor in the lower bay, the captain should proceed to quarantine station and get permission to go to the city.

U.S. consular bills of health, in duplicate from the last foreign port the vessel sailed from, or if the vessel has on board cargo from more than one port, consular bills of health are required from as many ports as cargo was taken on board. The consular bills of health, with quarantine permits also in duplicate), must be presented at the Custom House upon entry,

The United States—New York (continued).

and before discharge of cargo can commence a special health permit from the local city authorities must be got in exchange for quarantine permit.

Captains should always insist upon having pilots or tugboat's captain anchor vessels within the anchorage limits in New York harbour, otherwise the vessels are liable to a heavy fine, besides the expense of shifting.

In order to avoid considerable trouble and expense, masters would do well to consult their owner's agents before making arrangements with the numerous solicitors who will meet them on arrival. Should the crew leave the vessel on or after arrival, it would be best to hire a watchman from responsible parties; and it is to a vessel's interest to arrange for all harbour towages and towage to sea with some one of the several responsible tugboat firms.

Time Signals.—Chronometers can be checked. A black ball is hoisted halfway up a staff on the tower of the Western Union Telegraph Office at 11 h. 55 m. 0 s., and close up at 11 h. 58 m. 0 s. a.m. The ball is dropped at noon mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 0 h. 3 m. 58.3 s. local mean time.

Pilotage.—

TABLE OF PILOTAGE, VIA SANDY HOOK.

As established by an Act of the Legislature of the State of New York, passed

April 3, 1884.

From April 1 to November 1.

Feet. and inches.	INWARD.		OUTWARD.		Feet. and inches.	INWARD.		OUTWARD.	
	Rate.	Pilotage.	Rate.	Pilotage.		Rate.	Pilotage.	Rate.	Pilotage.
	Dol. c.	Dol. c.	Dol. c.	Dol. c.		Dol. c.	Dol. c.	Dol. c.	Dol. c.
6	2 78	16 68	2 02	12 12	22	4 88	107 36	3 56	78 32
6-6	"	18 07	"	13 13	22-6	"	109 80	"	80 10
7	"	19 46	"	14 14	23	"	112 24	"	81 88
7-6	"	20 85	"	15 15	23-6	"	114 68	"	83 66
8	"	22 24	"	16 16	24	"	117 12	"	85 44
8-6	"	23 63	"	17 17	24-6	"	119 56	"	87 22
9	"	25 02	"	18 18	25	"	122 00	"	89 00
9-6	"	26 41	"	19 19	25-6	"	124 44	"	90 78
10	"	27 80	"	20 20	26	"	126 88	"	92 56
10-6	"	29 19	"	21 21	26-6	"	129 32	"	94 34
11	"	30 58	"	22 22	27	"	131 76	"	96 12
11-6	"	31 97	"	23 23	27-6	"	134 20	"	97 90
12	"	33 36	"	24 24	28	"	136 64	"	99 68
12-6	"	34 75	"	25 25	28-6	"	139 08	"	101 46
13	"	36 14	"	26 26	29	"	141 52	"	103 24
13-6	"	37 54	"	27 27	29-6	"	143 96	"	105 02
14	3 38	47 32	2 33	32 62	30	"	146 40	"	106 80
14-6	"	49 01	"	33 78	30-6	"	148 84	"	108 58
15	"	50 70	"	34 95	31	"	151 28	"	110 36
15-6	"	52 39	"	36 11	31-6	"	153 72	"	112 14
16	"	54 08	"	37 28	32	"	156 16	"	113 92
16-6	"	55 77	"	38 44	32-6	"	158 60	"	115 70
17	"	57 46	"	39 61	33	"	161 04	"	117 48
17-6	"	59 15	"	40 77	33-6	"	163 48	"	119 26
18	4 13	74 34	3 08	55 44	34	"	165 92	"	121 04
18-6	"	76 40	"	56 98	34-6	"	168 36	"	122 82
19	"	78 47	"	58 52	35	"	170 80	"	124 60
19-6	"	80 53	"	60 06					
20	"	82 60	"	61 60					
20-6	"	84 66	"	63 14					
21	4 88	102 48	3 56	74 76					
21-6	"	104 92	"	76 54					

Vessels boarded so far south or east that Sandy Hook light vessel cannot be seen from deck in daytime and clear weather, one-quarter extra.

The United States—New York (continued).

Seamen's Hospital :—

		Dols.	c.
Steamships, for medical attendance on board and in hospital	..	25	00 in full.
"	..	15	00 " in hospital only
Ships	..	11	00 "
Barques	..	9	00 "
Brigs	..	7	00 "
Schooners	..	6	00 "

Payable on entrance at the Custom House. Charges by the day, 1 dol.

Towages :—There is at present no regular tariff. Inward, via Sandy Hook, varies from 25 dols. to 200 dols., according to generosity of captain of vessel requiring services of boat. Outward, from 20 dols. to 50 dols., based on size of vessel. Harbour shifts, 10 dols. per hour (minimum, 10 dols.); two being used to move large craft.

Stevedore Charges :—

DISCHARGING.		Per ton.	DISCHARGING.		Per ton.
		Dols. c.			Dols. c.
Steel blooms	..	0 35	Sugar East Indian, basket	..	0 25
Spiegel iron	..	0 35	Sugar, Honolulu, per ton	..	0 25
Iron ore	..	0 30	Sugar, from Hamburg	..	0 35
Pig-iron	..	0 30	Sugar, from Manilla and Java, in mats	..	0 25
Salt	..	0 35	Sugar, jaggery	..	0 40
Sulphur	..	0 35	Hemp from Manilla	..	0 16
Coal (cannel)	..	0 35	Hong Kong	..	0 16
Chemicals	..	0 35	Tea measurement	..	0 18
Rails	..	0 35	China and Japan wool and skins	..	0 30
Tin-plate	..	0 35	Singapore cargoes	..	0 30
Rice	..	0 28	(Not more than 10 per cent. Gambier).		
Scrap iron, by the day	..		Manganese ore	..	0 35
General cargo, weight and measurement	..	0 35	Gambier	..	0 45
Fruit, per box	..	0 02½	Raisins (65 boxes to the ton)	..	0 40
Currants	..	0 33	China clay in bulk	..	0 35
Sugar, per hhd., Cuba	..	0 16	China clay in casks	..	0 35
Sugar, per bag, Cuba	..	0 03½	China clay mixed	..	0 35
Brick, per 1,000	..	1 50	Cement	..	0 35
Nitrate of soda (including mending)	..	0 35	Chalk	..	0 30
Calcutta cargoes per sailing ships	..	0 16	Bones	..	0 65
Not to exceed 150 tons cutch.			Bleaching powder	..	0 35
Calcutta cargoes, per steamship	..	0 18	Coffee, per bag (less 15 per cent.)	..	0 02½
Not to exceed 150 tons cutch.					

Fore Peaks and Lazarets by day work.

LOADING.		Per ton.	LOADING.		Per ton.
		Dols. c.			Dols. c.
General cargo for steamers	..	0 40	Case oil, per case	..	0 00½
Machinery, under 2 tons	..	1 00	Bag grain, per 1,000 bushels	..	5 00
Machinery, over 2 tons, by the day	..	—	Fodder, per bale	..	0 07
Tobacco, screwed	..	0 50	Fodder, per bag	..	0 02½
Tobacco, per hand, per hhd.	..	0 45	Barrel oil, per barrel	..	0 05
Cotton, screwed	..	0 40	General cargo—Australia, 55c.	} Charterer's stevedore.	
Cotton, per hand, per bale	..	0 18	General cargo—S. Africa, 45 c.		
Coal in bunkers	..	0 40	General cargo—S. America, 45 c.)		

Charges for Vessels Loading Grain :—Inspector's fees : For out inspection and superintending at place of delivery of grain afloat (when requested), 40 c. per 1,000 bushels. Receiving, weighing, and discharging, ⅓ c. per bushel. Trimming ocean vessels, 2 dols. per 1,000 bushels.

Commission on Shipping :—

On purchase or sale of vessels	..	2½ per cent.
Engaging freight and passengers	..	2½ "
Collecting insurance losses of all kinds	..	2½ "
Chartering vessels on amount of freight, actual or estimated, to be considered as due when the charter-parties are signed	..	⅓ of 5 "
On giving bonds for vessels under attachment in litigated cases, on amount of liability	..	2½ "

The foregoing commissions to be exclusive of brokerage and every charge actually incurred.

The United States—New York (continued).

Freight Brokerage :—

Grain	1½ per cent. on amount of freight.
Petroleum	½ of 5 „ „
General cargo	1¼ „ „

Pro Forma Charges on a steamer of 2,300 tons net reg. discharging 5,000 tons Java sugar, and loading 138,000 cases of oil for Shanghai at 22 c. per case :—

INWARDS—		Dols.	c.	£	s.	d.
To Custom House entry		149	10			
„ Report		3	00			
„ Pilotage, 22 ft.		107	36			
„ Noting protest		1	00			
„ Custom House officer night permit		20	00			
„ Port-warden survey on cargo		15	00			
„ Wharfage, 8 days at 14 dols. 50 c.		116	00			
„ Stevedore, 5,000 tons at 25 c.		1,250	00			
„ Dock clerk about		110	00			
„ Cooper		75	00			
„ Watching vessel, 8 nights at 2 dols.		16	00			
„ Towage		20	00			
„ Boatman running lines		3	00			
„ Attendance, £10 10s. at 4 dols. 86 c.		51	03			
„ Advertising, telephone, blanks, postage, and petties		25	00			
		1,961	49	=	403	11 9

OUTWARDS—		Dols.	c.			
To Wharfage, 20 days		320	00			
„ Dunnage	about	750	00			
„ Stevedore ¾ c. per case		1,035	00			
„ Hoisting, 1 dol. 50 c. per 1,000 cases		207	00			
„ Watching vessel, 20 nights		20	00			
„ Towage		60	00			
„ Boatman running lines		3	00			
„ Custom House clearance		10	90			
„ Pilotage, 23½ ft.		83	66			
„ Advertising, telephone, blanks, postage, and petties		15	00			
„ Attendance, £10 10s.		51	03			
		2,575	59			
„ Commission on freight 1½ per cent., £6,246 18s. 3d.		506	00			
		3,081	59	=	634	1 5
				£1,037 13 2		

NORFOLK.

Norfolk, in lat. 36°51' N., long. 76°16' W., is about 28 miles from the Atlantic Ocean, and about 10 miles from Hampton Roads.

Population.—68,530.

Imports.—Iron pyrites, copper ore, chemicals, seeds, salt, kainite, wines, plate glass, matting, tobacco, and general merchandise.

Exports.—Coal, cotton, lumber, tobacco, staves, flour, grain, lard, and general merchandise.

Accommodation.—There is a depth of 30 ft. at high water, and of 26 ft. 6 in. at low water. The harbour limits extend for 6½ miles, having a depth of 30 ft. at high water ; over 15 miles water front. The width of the channel at the widest point is 1,500 ft., and at the narrowest point 600 ft., having a depth of water of 30 ft. There are numerous piers for loading and discharging coal and merchandise.

The United States—Norfolk (continued).

Navigation is not obstructed by ice at any season of the year.

The following Government dry docks are available when not required by men-of-war :—

Dock.	Length in feet over all.	Width of Entrance in feet at high spring level.	Depth on the Sill in feet at high springs.
Government Stone	320	60	25
„ Granite	590	112 at coping	32
„ Simpson's Wood	491½	81½	25½

There are two slips to raise 650 and 800 tons respectively. There are twenty-four coal staithes capable of shipping 35 to 40 tons per hour, with a depth alongside of 10 to 22 ft. at high and low water. There is a grain elevator with a capacity of 110,000 bushels.

Time Signals.—Chronometers can be checked. A black ball is hoisted on the flagstaff on the roof of the Citizen's Bank at 11.55 a.m., and dropped at noon standard time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 23 h. 54 m. 49.8 s. local mean time.

Pilotage.—Compulsory. See **Newport News**. Vessels bound here will always find pilots off Cape Henry.

Port Charges.—Tonnage Dues :—See the **United States**. **Wharfage :—**1 c. per net ton per day. Vessels loading coal or coke, free. **Entrance and Clearance Fees :—**About 4 dols. 70 c. **Harbour-master's Fee :—**10 dols. **Towage :—**1 c. per ton with steam ; 1½ c. per ton without steam. **Boat or Launch Hire :—**1 dol. per hour. **Labour :—**15 to 40 c. per hour. **Quarantine Charge :—**For inspection, 7 dols. **Discharging or Taking in Ballast :—**From 15 c. to 30 c. per ton according to dispatch. **Ballast :—**50 c. to 1 dol. 50 c. per ton according to quality. **Brokerage :—**25 to 50 dols. Bunker steamers, 5 dols. **Trimming Bunker Coal :—**10 c. per ton ; cargo, 7 c. per ton ; coke, 14 c. per ton. Coal for bunkering, 3 dols. 25 c. to 4 dols. per ton.

Pro Forma Charges on a British steamer of 2,335 tons reg. coming to load, and bound for St. Lucia :—

	Dols.	c.
Trimming cargo, 5,501 tons at 7 c. per ton	385	07
Pilotage in, 13 ft. at 4 dols. per foot	52	00
Pilotage out, 23 ft. 3 in. at 5 dols. per foot	116	25
Water, 2,400 gallons at ½ c.	12	00
Health officer	7	00
Medical attendance	15	00
Ship-chandler	87	70
Custom House fees	6	07
Tonnage dues	153	24
Consular fees	4	40
Tugboat	46	70
Running lines	3	00
Cash to captain	50	00
Watching crew	5	00
Entering and clearing at Custom House	5	00
Cables, telegrams, and telephones	4	50
Postage and petties	1	00
Attendance fee	50	00
Delivering orders at Capes	10	00

1,013 93 = £208 12s. 6d.

The United States—Norfolk (continued).

Pro Forma Charges on an Italian steamer of 2,579 tons reg. coming from Galveston, and bound to Genoa, calling to bunker :—

	Dols.	c.
865 tons coal at 3 dols. 40 c. per ton	2,941	00
Trimming 865 tons at 10 c. per ton	86	50
Pilotage in, 19 ft. 10 in. at 3 dols. per foot	59	50
Pilotage out, 21 ft. 7 in.	64	75
Water, 1,800 gallons at $\frac{1}{2}$ c. per gallon	9	00
Health officer	7	00
Medical attendance	5	00
Custom House fees	4	70
Consular fees : Italian, 3 dols ; Spanish, 10 dols. 43 c.	13	43
Entering and clearing at Custom House	5	00
Cables, telegrams, and telephones	6	00
Postage and petties	0	25
Medical attendance	5	00
Commission, $2\frac{1}{2}$ per cent.	4	37
	3,211	50 = £660 16s. 0d.

OLYMPIA.

Olympia, in lat. $47^{\circ}1' N.$, long. $122^{\circ}45' W.$, is situated at the head of Budd Inlet, which is 6 miles long and $\frac{3}{4}$ of a mile wide.

Accommodation.—There is a depth of 3 fathoms on the W. side of Budd Inlet within $1\frac{1}{2}$ miles of the wharf. Vessels are brought up to the wharf at the highest tides and lie in the mud until ready to leave. The greatest difference between high and low tide is about 24 ft.

For expenses, see **Tacoma**.

PASCAGOULA.

Pascagoula, in lat. $30^{\circ}25' N.$, long. $88^{\circ}35' W.$, is situated on the Gulf of Mexico.

Population.—1,000.

Exports.—Lumber and naval stores.

Accommodation.—The harbour is natural and good. Vessels can load to a depth of 17 ft. up the river, and to 22 ft. at Horn Island in summer time, and $21\frac{1}{2}$ ft. in winter time. The anchorage is north of Horn Island, where 25 ft. at fair tide and 23 ft. at lowest tide can be had. Draught of water is guaranteed by the pilots to be 22 ft. on the bar in spring and summer, and $21\frac{1}{2}$ ft. in winter. Pascagoula River has been dredged by the Government to a depth of 17 ft., which enables vessels of this draught to load at the mills.

Pilotage.—Compulsory. 4 dols. per foot in or out.

Port Charges.—**Harbour-master's Fee** :—For boarding, 5 dols. ; 5 dols. additional for each move, and 3 dols. 50 c. per day while discharging ballast. 20 c. per ton is charged for the use of a lighter while discharging ballast. **Towage** :—20 c. per ton for the round journey ; 40 c. per ton additional if the vessels go up the river. **Mooring** :—5 dols. per reg. ton. **Entrance Fees** :—2 dols. 70 c. **Clearance Fees** :—2 dols. 70 c. **Ballast** :—20 c. per ton, in bay ; up the river, free. **Labour** :—1 dol. 50 c. per day. **Loading** :—Lumber, 75 c. per 1,000, or 1 dol. 50 c. per std. ; timber, 75 c. per load. **Water** :—1 c. per gallon. **Wood** :—Mill cord-wood, 2 dols. per cord.

The United States—Pascagoula (continued).

Provisions and ship-chandlery reasonable. Fresh beef, 10 c. per lb.

Commission :—On disbursements, $2\frac{1}{2}$ per cent.

Pro Forma Charges on a British vessel (sail or steam) of 832 reg. tons, carrying 632,000 ft. of pitch-pine lumber :—

	Dols.	c.
Custom House entry, stamps and brokerage	28	53
Harbour-master, boarding fee	5	00
Pilotage inward, 12 ft.	48	00
Pilotage outward, 18 ft.	72	00
Tow-boat inward, if used	83	20
Tow-boat outward, if used	83	20
Consular fee	0	65
Custom House clearance and stamps	2	90
Discharging 200 tons ballast	40	00
Harbour-master while discharging ballast	30	00
	393	48 = £80 19s. 2d.

PENSACOLA.

Pensacola is in lat. $30^{\circ}28'$ N., long. $87^{\circ}14'$ W.

Population.—22,260.

Imports.—Cement, iron ore, kainit, etc.

Exports.—Pitch pine, tobacco, cotton, coal, pig-iron, turpentine, phosphate rock, cotton-seed meal, corn, wheat, etc.

Accommodation.—The harbour of Pensacola is one of the best ports on the Gulf of Mexico, and is safe, commodious, and able to shelter any number of vessels. There is 31 ft. at low water, and 33 ft. at high water, in the Caucus channel, which is 300 ft. wide, and inside this there is $4\frac{1}{2}$ to 6 fathoms; rise of tide seldom exceeds 2 ft. The Louisville and Nashville Railroad Co. have recently added extensive terminal facilities at their three docks.

Muscogee wharf, which is used mainly for the export of coal, has a total area of 191,200 sq. ft., its length being 2,440 ft., and the width varying from 46 ft. at the shore end to 120 ft. at the seaward extremity. The wharf is thoroughly equipped with modern appliances for the rapid loading of vessels with cargo or bunker coal.

Tarragona Street wharf is 1,950 ft. in length, the width varying from 13 to 140 ft. There is a warehouse on the wharf, 815 ft. long and 50 ft. wide. A portion of the warehouse is used for export freight, and the remainder is devoted to the storing of import cargoes shipped in bulk. At the shore end of the wharf there is a grain elevator with a capacity of 500,000 bushels. There are also twenty-seven grain spouts, through which grain can be delivered to the holds of vessels lying alongside.

Commandancia Street wharf is 2,065 ft. long and about 110 ft. wide. The warehouse on this wharf is 1,200 ft. long by 50 ft. wide. On either side of the wharf there are elevated tracks and platforms, and it is thoroughly equipped for the quick handling of cargoes. The depth of water at the above three wharves is 28 ft. at low tide, and vessels of any size, after loading, can proceed with safety to sea under their own steam, without the assistance of tugs.

The following are the dimensions of the floating docks and slips :—

The United States—Pensacola (continued).

Dock.	Length in feet over all.	Width of Entrance in feet at high springs level.	Depth on Sill at high springs in feet.	Lifting Power in tons.
Government Floating	234	57	17	2,236
Government Floating (C. & S. type).	450	82	27	12,000
Floating (private)	165	46	10	300
Slip (Blackwater)	190 (cradle)	—	Forward 12 Aft 20	1,600
Slip (Gulf of Mexico)	182 (cradle)	40	Forward 15 Aft 15	900 if not longer than 200 ft.

Extensive repairs can be carried out. There is a 36 ton crane.

Pilotage.—Same inwards and outwards :—

10 ft. and up to 13½ ft.	4 dols. per foot
14 ft. and up to 19½ ft.	5 " " "
20 ft. and over	6 " " "

Steamers calling for bunkers exclusively, 2 dols. 25 c. per foot inwards, and the same outwards.

Port Charges.—**Harbour-master's Fees** :—1 c. per reg. ton (maximum, 20 dols.). Steamers calling for bunker exclusively, ½ c. per ton reg. For each movement, 5 dols. City to quarantine, 10 dols. Quarantine to city, 10 dols.

Wharfage :—At L. and N.R.R. Co's docks :—

Steamers, ½ c. per reg. ton per day, or fraction of a day.

Sailing vessels, ⅓ c.

Sundays and legal holidays excepted. Minimum charge 3 dols. per day, or fraction thereof.

Stevedore :—Stowing cotton, 35 c. per bale ; loading timber, 85 to 90 c. per load (50 cub. ft.) ; loading lumber, 75 c. to 90 c. per m. (The above rates on timber and lumber depend on the size of the steamer and handiness in loading same.) **Discharging** :—Cargoes of kainit, salt, guano, or pyrites in bulk or bags, 35 c. per long ton. Steamers furnish steam winches for discharging. **Trimming Coal Cargoes** :—7 to 10 c. per long ton ; trimming coal in bunkers, 10 c. per long ton. **Loading** :—General merchandise, 30 c. per short ton ; sacks for grain, 4½ c. per bag ; filling, sewing, and stowing same, 1½ c. per bushel. **Labour** :—1 dol. 50 c. to 2 dols. per day. **Water** :—⅓ c. to ½ c. per gallon. **Provisions** :—Beef, 10 to 12 c. per lb. **Wood** :—2 dols. 50 c. per cord of 128 cub. ft. **Commission** :—Securing and collecting freight, and advancing and disbursing, 2½ per cent.

Pro Forma Charges on a steamer of 2,300 tons coming from a foreign port :—

	Dols.	c.
Entrance fees	2	70
Clearance fees	3	37
Tonnage dues	138	00
Advertising crew	2	50
Wharfage, vessel, 4 days ½ c. per ton per day	46	00
Wharfage, lighters, 3 lighters at 3 dols. each	9	00
Wharfage, timber, 500 pieces at 5 c. per stick	15	00
Port-physician fees	20	00
Druggist bill	3	00
Consular fees, British	2	40
Stevedore's bill, 1,239,350 sup. ft. lumber at 1 dol., 1,239 dols. 35 c. ;		
2,491 loads timber at 70 c., 1,743 dols. 70 c.	2,983	05
Wedges, 1,000 at 5 c.	50	00

Carried forward 3,275 02

The United States—Pensacola (continued).

	Dols.	c.
Brought forward	3,275	02
Stanchions, 30 at 50 c.	15	00
Pilotage in and out, 13 ft. at 4 dols., 52 dois.; 23 ft. at 6 dols., 138 dols.	190	00
Water, 2,000 gallons at 25 c. per 100 gallons	5	00
Butcher	63	00
Blacksmith and machinist	60	00
Ship-chandler	118	00
Boatman, 14 days at 1 dol. 50 c., 21 dols.; running lines, 6 dols.	27	00
Winchmen, 30 at 4 dols. per day	120	00
Watchman, 4 days alongside wharf at 2 dols. 50 c.	10	00
Harbour-master's fees, 1 c. per ton, 23 dols.; moves, 5 dols., 5 dols.	33	00
Timber custodian	2	00
Postage, cables, etc.	7	30
Attending ship's business	50	00
Cablegrams and telegrams	10	42

3,985 74 = £820 2s. 0d.

PERTH AMBOY.

Perth Amboy is in lat. 40°32' N., long. 74°17' W.

Population.—27,540.

Imports.—Asphalt, lead, copper, phosphate rock, lead ores, and lumber.

Exports.—Coal, lead, copper, and silver.

Accommodation.—There is a depth of 24 ft. at high water, of 19 ft. at low water, and of 18 ft. at lowest spring tide. The piers are principally used for shipping oil (in cases and barrels) and coal.

The following are the dry and floating docks:—

Dock.	Length on Blocks in feet.	Breadth of Entrance in feet.	Depth on Sill at high water ordinary springs in feet.
Dry Dock No. 1	100	28	8
" " No. 2	157	52	14
" " No. 3	250	76	20
Floating, No. 1	250	62	18
" " No. 2	160	46	14
" " No. 3	125	41	12

Pilotage.—Compulsory. 4 dols. 13 c. per foot in; 3 dols. 8 c. per foot out.

Port Charges.—**Entrance Fees**:—2 dols. 50 c. **Clearance Fees**:—2 dols. 50 c. **Towage**:—Sailers, 60 dols. in, 20 dols. out; steamers, 30 dols. in, 10 dols. out. **Tonnage Dues**:—See **United States**. **Ballast**:—35 c. per ton. **Survey**:—3 dols.

Pro Forma Charges on a steamer of 2,000 tons reg., with cargo in and ballast out, drawing 20 ft. loaded:—

	Dols.	c.
Pilotage in, 82 dols. 60 c.; out, 36 dols. 96 c.	119	56
Towage in, 30 dols.; out, 10 dols.	40	00
Custom House fee, entrance	2	50
" " " clearance	2	50
Tonnage dues	120	00
Survey	3	00

287 56 = £59 3s. 0d.

PHILADELPHIA.

Philadelphia, in lat. 40°0' N., long. 75°8' W., is situated on the west bank of the Delaware River. Distance from the open sea, 96 miles.

The United States—Philadelphia (continued).

Population.—About 1,441,740.

Imports.—General merchandise, iron ore, West Indian products, lumber, etc.

Exports.—Cereals, provisions, petroleum, cotton, tobacco, oilcake, staves, etc.

Accommodation.—There is an excellent harbour here capable of receiving the largest vessels afloat; the holding ground is good and the bottom soft. There is a depth of water at spring tides of 28 ft., and at low tide of 22 ft. Newcastle is a good harbour for vessels detained by ice. By keeping Cape Henlopen lighthouse bearing from W. to N.W., and giving it a wide berth of 3 miles, any size ship can get into the bay in safety. There are about 200 wharves with from 20 to 26 ft. of water at low tide; tides rise 6 ft. Delaware breakwater is a convenient port of call, just inside Cape Henlopen, suitable for the largest vessels.

Grain cargoes are loaded from elevators. Petroleum cargoes are loaded at the refineries at Point Breeze and Gibson's Point, on the Schuylkill, or at the Marcus Hook, 14 miles below Philadelphia. Every facility exists for the quick dispatch of cargoes. There are several ballast cranes capable of discharging 10 to 20 tons per hour each; other cranes for discharging ore; thirty staithes for shipment of coal from 100 to 150 tons per hour each; three grain elevators; modern petroleum wharves. There is a privately owned floating crane to lift from 20 to 125 tons.

The following are the dimensions of the dry docks and slips :—

Port.	Length over all in feet.	Width of Entrance at high springs level in feet.	Depth on Sill in feet.	Lifting Power in tons.
Navy Yard, Simpson's	491½	85	25½	
League Island, No. 2. . . .	744	102 at coping level	30	
Kensington Ship Yard Co. . . .	412	67	22	
Kensington Ship Yard Co. Slip	230	—	Forward 8 } Aft 20 }	800
" " " "	240	40	Forward 7 } Aft 20 }	1,000
Neafie and Levy S. & E.B. Co. Slip.	200	40	Aft 12	1,000

All kinds of repairs can be executed at the docks and shipyards. There is a 120 ton floating derrick and two 60 ton sheers.

Every shipmaster is bound to report immediately on arriving (within 24 hours) to the warden's office, under a penalty of 10 dols., and incurs a like penalty if he does not record his clearance before departing.

Anchorage.—Vessels must not anchor in the River Delaware in front of the city limits, west of the red buoys, below Kaighn's Point; penalty, 75 dols.

Manner of Lying at Wharves.—All vessels hauled into any wharf or dock, or alongside of another vessel that may be lying at such wharf or dock, must be made fast to the shore by proper lines, with sufficient fenders between them and the inside vessel, and shall cause the fleys of their anchors to be taken on board and have the jibboom, spritsail yards, mainboom spanker, ringtail booms, and davits, if any, rigged in, and the lower yards topped

The United States—Philadelphia (continued).

An abstract of the health laws governing quarantine is handed to captains on their arrival.

REGULATIONS FOR VESSELS LOADED WITH PETROLEUM.

1st.—Steamers or sailing vessels loaded with petroleum, benzine, benzole, or naphtha, are not allowed to moor to any wharf on the Delaware River north of Dickinson Street; nor to lie in the stream within the jurisdiction of the State of Pennsylvania above that point.

2nd.—Steamers or sailing vessels loaded with petroleum, benzine, benzole, or naphtha, moored to any wharf in the city of Philadelphia, as above, and vessels not so loaded lying within 150 ft. of such steamers or sailing vessels so loaded, and moored to or lying within that distance of a wharf where petroleum is kept or stored, are not allowed to have aboard any fire or light, lighted cigar or pipe of any kind whatsoever, unless by the written permission, duly signed by the owner, lessee, or superintendent of the wharf at which the vessel is lying, setting forth particularly the lights and fires that may be used, and the manner of using them.

DEMURRAGE AND LAY-DAY SCALE, AS APPROVED BY THE PHILADELPHIA MARITIME EXCHANGE, AND, IN ABSENCE OF ANY SPECIAL AGREEMENT TO THE CONTRARY, TO BE UNDERSTOOD AS GOVERNING ALL GRAIN AND PETROLEUM CHARTERS MADE ON PHILADELPHIA ACCOUNT, OR FOR VESSELS TO LOAD AT PHILADELPHIA.

For Vessels loading Grain for Foreign Ports.

For Vessels registering.				Lay-days for Vessels loading Grain.			
From	200 to	250 tons.	.	21 days to load and discharge.			
"	251 to	300 "	.	22	"	"	"
"	301 to	350 "	.	23	"	"	"
"	351 to	400 "	.	24	"	"	"
"	401 to	450 "	.	25	"	"	"
"	451 to	500 "	.	26	"	"	"
"	501 to	550 "	.	27	"	"	"
"	551 to	600 "	.	28	"	"	"
"	601 to	650 "	.	29	"	"	"
"	651 to	700 "	.	30	"	"	"
"	701 to	800 "	.	31	"	"	"
"	801 to	900 "	.	32	"	"	"
"	901 to	1,000 "	.	33	"	"	"
"	1,001 to	1,100 "	.	34	"	"	"
"	1,101 to	1,200 "	.	35	"	"	"
"	1,201 to	1,300 "	.	36	"	"	"
"	1,301 to	1,400 "	.	37	"	"	"
"	1,401 to	1,500 "	.	38	"	"	"
"	1,501 to	1,600 "	.	39	"	"	"
"	1,601 to	1,700 "	.	40	"	"	"
"	1,701 to	1,800 "	.	40	"	"	"

For Vessels loading Petroleum for Foreign Ports.

LAY-DAYS FOR VESSELS LOADING PETROLEUM.

Vessels of	2,000 to	2,500 bbls.	capacity to have	10 lay-days.
"	2,501	" 3,000	"	12 "
"	3,001	" 4,000	"	14 "
"	4,001	" 5,000	"	15 "
"	5,001	" 6,000	"	17 "
"	6,001	" 7,000	"	20 "
"	7,001	" 8,000	"	22 "
"	8,001	" 9,000	"	25 "

Customary dispatch for discharging.

The United States—Philadelphia (continued).

Time Signals.—A ball is hoisted on the S.E. corner of the roof of the Philadelphia Bourse, and dropped at noon mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time, and 0 h. 0 m. 37 s. local mean time.

Pilotage.—Compulsory.

RATES OF PILOTAGE FOR THE PORT OF PHILADELPHIA.

Feet.	REGULAR RATE INWARD OR OUTWARD.	INWARD.	INWARD.
	If spoken inside of Five Fathom Lightship and outside of line drawn from Cape May Light to Cape Henlopen Light.	If spoken east of Five Fathom Bank Lightship, or north of Hereford Inlet Lighthouse, or south of Fenwick's Is- land Light.	If not spoken until inside of line drawn from Cape May Light to Cape Henlopen Light.
	Dols. c.	Dols. c.	Dols. c.
8	32 00	35 20	28 80
8½	34 00	37 40	30 60
9	36 00	39 60	32 40
9½	38 00	41 80	34 20
10	40 00	44 00	36 00
10½	42 00	46 20	37 80
11	44 00	48 40	39 60
11½	46 00	50 60	41 40
12	48 00	52 80	43 20
12½	62 50	68 75	56 25
13	65 00	71 50	58 50
13½	67 50	74 25	60 75
14	70 00	77 00	63 00
14½	72 50	79 75	65 25
15	75 00	82 50	67 50
15½	77 50	85 25	69 75
16	80 00	88 00	72 00
16½	82 50	90 75	74 25
17	85 00	93 50	76 50
17½	87 50	96 25	78 75
18	90 00	99 00	81 00
18½	92 50	101 75	83 25
19	95 00	104 50	85 50
19½	97 50	107 25	87 75
20	100 00	110 00	90 00
20½	102 50	112 75	92 25
21	105 00	115 50	94 50
21½	107 50	118 25	96 75
22	110 00	121 00	99 00
22½	112 50	123 75	101 25
23	115 00	126 50	103 50
23½	117 50	129 25	105 75
24	120 00	132 00	108 00
24½	122 50	134 75	110 25
25	125 00	137 50	112 50
25½	127 50	140 25	114 75
26	130 00	143 00	117 00
26½	132 50	145 75	119 25
27	135 00	148 50	121 50
27½	137 50	151 25	123 75
28	140 00	154 00	126 00
28½	142 50	156 75	128 25
29	145 00	159 50	130 50

A vessel calling at the Delaware Breakwater for orders, and afterwards proceeding to a port of discharge other than Philadelphia, shall, if such vessel take a pilot, be charged for pilotage into breakwater and out again to sea, a total for such services equal to one-half the inward pilotage of the said vessel as already provided had such vessel proceeded to Philadelphia;

The United States—Philadelphia (continued).

but nothing in this section shall be construed so as to interfere with the detention charge of 3 dols. per day as provided by law.

Every pilot detained by the master, owner, or consignee, or by the ice, is entitled to 3 dols. per day. Every pilot obliged by the ice or stress of weather to proceed to another port is entitled to pilotage; and, if there discharged to 8 c. a mile for every mile he has to travel home.

Every outward bound vessel is required to remain at the Cape 24 hours after its arrival, to give the pilot an opportunity to be taken out, under a penalty of 800 dols.

TOWAGE OF SQUARE-RIGGED VESSELS—OUTWARD BOUND.

REGISTER TONNAGE.		NEW CASTLE. 33 miles.	REEDY ISLAND. 46 miles.	MORRIS LISTON'S. 52 miles.	BOMBAY HOOK. 61 miles.	LEDGE LIGHT. 77 miles.	14 FT. BANK. 84 miles.	BREAK-WATER. 103 miles.
From		Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
150 to	200 tons .	21	27	29	31	39	42	52
"	201 to 300 "	23	31	35	37	46	50	62
"	301 to 400 "	26	35	39	43	54	57	72
"	401 to 500 "	29	39	43	49	62	67	82
"	501 to 600 "	32	43	47	55	69	76	93
"	601 to 700 "	34	47	52	61	77	84	103
"	701 to 800 "	37	51	57	67	85	92	113
"	801 to 900 "	40	55	62	73	92	101	124
"	901 to 1,000 "	44	60	68	79	100	109	134
"	1,001 to 1,100 "	47	64	73	85	108	118	144
"	1,101 to 1,200 "	50	69	78	92	116	125	155
"	1,201 to 1,300 "	54	74	83	98	123	134	165
"	1,301 to 1,400 "	57	78	88	104	131	143	175
"	1,401 to 1,500 "	60	83	94	110	139	151	185
"	1,501 to 1,600 "	64	87	99	116	145	160	196
"	1,601 to 1,700 "	67	92	104	122	154	168	208
"	1,701 to 1,800 "	70	97	109	128	162	176	216
"	1,801 to 1,900 "	74	101	114	134	169	185	227
"	1,901 to 2,000 "	77	106	120	140	177	193	237
"	2,001 and upwards .	84	115	130	153	193	210	258

Rate of towage on inward bound vessels is two-thirds of the outward rate as published above.

Vessels outward bound usually tow to Bombay Hook or Reedy Island, the wind being generally fair from these points.

Transporting vessels along the city front costs from 4 dols. to 23 dols., according to tonnage.

Transporting grain to elevators at some distance, about 5 dols. extra, and to oil refineries about 10 dols. extra.

Transporting steamships, 20 dols. to 25 dols.

The larger tugs can generally be found cruising from 10 to 40 miles outside the capes of the Delaware.

Port Charges.—Tonnage Dues :—See **United States. Wharfage :**—Sailing vessels, from 4 to 10 dols. per day; steamers, from 15 to 20 dols. per day, according to tonnage.

Entrance fee, 2 dols. 50 c.; surveyor's fees, 3 dols.; manifest stamp, 1 dol. to 2 dols.; clearance fee, 2 dols. 50 c.; bill of health, 20 c.; certified manifest, 20 c.; noting protest, 1 dol. 50 c.; extension of protest, 7 dols. 50 c. to 15 dols.; survey on hatches and cargo, 10 dols. 25 c.; survey of hull, tackles, 12 dols. 25 c.; additional survey, 6 dols.; night and day watchman, if required, 1 dol. 50 c. to 3 dols.

The United States—Philadelphia (continued).

Quarantine Fees.—Steamers from foreign ports, 10 dols.; sailing vessels from foreign ports, 5 dols.

Labour:—2 dols. to 3 dols. per day. **Ballast:**—Stone, 1 dol. 25 c. to 1 dol. 80 c. per ton; sand, 20 c. to 50 c. per ton. **Water:**—10 dols. for any quantity. **Provisions:**—Beef, 15 c. per lb. **Wood:**—7 dols. per cord. **Coal:**—5 dols. 50 c. per ton.

Commission:—On effecting charters, $2\frac{1}{2}$ to 5 per cent. Collecting inward freight, $1\frac{1}{4}$ per cent. Commission for selling goods, $2\frac{1}{2}$ per cent. If sale is guaranteed, $2\frac{1}{2}$ per cent. extra.

STEVEDORES' CHARGES.

The following rates are quoted by responsible and experienced master workmen. Lower rates may be obtained from less reliable parties. Prices also vary according to the amount of work in port.

DISCHARGING.

	Dols. c.		Dols. c.
Ballast, per ton	0 28	Mahogany, per ton	0 75
Crockery, per ton measurement	0 35	Machinery	1 25
Fruit, dry	0 35	Logwood	35 c. to 0 40
Cotton, per bale	10 c. to 0 12	Coffee, per bag	0 02
General cargo, per bl.	0 02 $\frac{1}{2}$	Fruit, green, per box	1 $\frac{1}{4}$ c. to 0 02
Hides, dry, per 1,000	10 00	Guano, per ton weight	0 35
Horns, per ton	0 60	Cork, per bale	0 04
Iron	25 c. to 0 30	General cargo, weight or measure-	ment
Labour, per hour	0 35		0 35
Liquors, per ton	35 c. to 0 40	Hemp, per ton measurement, 30 c. to	0 35
Molasses, per hhd.	15 c. to 0 20	Lumber, per m.	0 40
Naval Stores, pitch, tar, resin, per bl.	0 02 $\frac{1}{2}$	Labour, per day	2 dols. to 2 50
Naval Stores, turpentine	0 03	Lead, per ton	0 30
Sugar, per hhd.	15 c. to 0 20	Marble, per ton	1 25
" per box	0 06	Rags, per ton measurement	0 30
" per bag	0 02	Soda, per ton weight	0 30
Tin plates, per ton	0 35	Saltpetre, per ton weight	40 c. to 0 45
Tea, per ton measurement, 35 c. to	0 40	Salt, per 1,000 bushels (W.I.)	10 00
Sumac	0 40	" Liverpool and Italian, per ton,	35 c. to 0 40
Scrap iron, per ton	0 50	(Limit of time for discharging salt, 1,000 bushels per day.)	
Sulphur	0 32	Wool, per ton measurement	0 35
Kryolite	0 40		

LOADING.

	Dols. c.		Dols. c.
Ballast, f.o.b., according to quality.		Cotton compressing	0 50
Stone, per ton	50 c. to 1 00	Hoops, per m.	0 40
Dirt, per ton	20 c. to 0 30	Syrup, per puncheon	0 30
Bacon	0 40	" per tierce	0 15
Coal trimming, according to size and number of hatches	5 c. to 0 08	Tallow, per hhd.	0 35
General cargo, per bl.	0 02 $\frac{1}{2}$	Oilcake, per ton	0 30
" per ton weight or measurement	0 35	Shooks, per bundle	0 02
Grain, per 1,000 bushels in bulk	2 00	Staves, per 1,000	2 dols. 50 c. to 3 00
" 1,000 bags	6 00	Iron, pig, per ton	0 25
" from lighters or sloops in bush, extra	4 00	" railroad, per ton	0 30
" hire of bags returned to Philadelphia	0 04 $\frac{1}{2}$	Lumber, per 1,000 ft.	0 50
" surveyor's fees	10 00	Marble, per ton	1 25
Petroleum, per round bl.	0 05	Naval stores—pitch, tar, resin, per bl.	0 04
" per case	0 01 $\frac{1}{2}$	Naval stores—turpentine	0 06
" use of cook-house, per day	0 50	Tobacco, per hhd.	50 c. to 0 60
Barrels, wet	0 03 $\frac{1}{2}$	Dunnage wood, per cord	5 00
" dry	0 02 $\frac{1}{2}$	" boards, per 1,000	10 00
Cotton, per bale	0 30	Hire of ballast logs, per pair	50 dols. to 100 00
		Machinery, including stowing, per ton	1 45

The United States—Philadelphia (continued).

Demurrage Scale.

The demurrage on sea-going sailing vessels shall be as follows, viz.:—

For vessels of 200 tons or under, 12 c. per ton.

For vessels over 200 tons, and not exceeding 500 tons, 24 dols. for the first 200 tons, and 8 c. per ton for each ton additional.

For vessels over 500 tons, and not exceeding 900 tons, 48 dols. for the first 500 tons, and 6 c. per ton for each ton additional.

For vessels over 900 tons, 72 dols. for the first 900 tons, and 5 c. per ton for each ton additional.

For steamer charters, demurrage and lay-days subject to special agreement.

Case Cargoes.

In absence of any fixed scale of days, either at Philadelphia or New York, it has been customary to use the barrel oil scale; and taking cases at five to the barrel, on the present scale, makes an arrangement satisfactory alike to vessel and shipper.

¶ **Vessels loading Grain.**—Cost of lining (ceiling) for bulk grain, $1\frac{3}{4}$ to $1\frac{1}{2}$ c. per bushel. Cost of lining (ceiling) for bag grain, $\frac{1}{2}$ to $\frac{3}{4}$ c. per bushel. Cost of lining (say platform for bag grain) if vessel load full cargo or bagged grain, a lump sum of 150 dols. to 250 dols., according to size of vessel.

Pro Forma Charges on a vessel of 312 tons reg. cargo in and out :—

	Dols.	c.
Inward pilotage, 14 ft.	70	00
Towage up the river	25	00
Stevedore, discharging	143	00
Port-warden's survey of cargo	10	25
Thirty tons sand ballast	9	00
Towage, changing berth	6	00
Four cords wood, for stowage	24	00
Fifteen days' wharfage, 4 dols.	60	00
Towage to Point Breeze to load	15	00
Noting protest	1	50
Entrance fee	17	90
Tonnage dues, 3 c. per ton	9	36
Stamps for charter-party	3	25
United States tax, stamps, and postages	7	00
Clearance fees	8	70
Consul's fees	14	19
Wharfage, 20½ days at 3 dols.	62	00
Stevedore, loading	228	10
Towage down river to Chester, 16 miles	40	50
Labour, hauling ship	6	00

760 75 = £156 10s. 6d.

Pro Forma Charges on a British steamer of 1,012 tons net reg., with a cargo of pig-iron inward, and a cargo of grain outward :—

	Dols.	c.
Entrance at Custom	2	50
Bill of health fee	10	00
Custom House surveyor's fee	3	00
Tonnage tax, 6 c. per ton.	60	72
Inward pilotage, 19 ft. at 5 dols. per foot	95	00
Stevedore discharging cargo, 1,500 tons at 30 c.	450	00
Advertising crew notice	5	50
Marine surveyors and inspectors	20	00
Wharfages, say 12 days at 8 dols.	96	00
Towages	100	00

Carried forward 842 72

The United States—Philadelphia {continued}.

	Dols.	c.
Brought forward	842	72
Ceiling for grain, according to agreement	200	00
Stevedore loading cargo grain, 8,000 qrs. $\frac{1}{2}$ bag and $\frac{3}{4}$ bulk grain, at 6 dols. per m. bag grain, and 2 dols. per m. bulk grain	213	28
Outward pilotage, 19 ft. at 5 dols.	95	00
Bag hire, 7,000 bags at $4\frac{1}{2}$ c. and insurance	385	00
Clearance at Customs, 3 dols. 30 c.; clearance at British Consul's, 2 dols. 50 c.	5	80
Attendance, 50 dols.; petties, 5 dols.	55	00

1,796 80 = £369 14s. 1d.

Expenses on same steamer, with ballast in and cargo of grain out, 1,503 dols. 80 c.

PLYMOUTH (Mass.).

Plymouth, in lat. $41^{\circ}58'$ N., long. $70^{\circ}42'$ W., is on the W. side of Cape Cod Bay, 35 miles S.E. of Boston.

Population.—13,000.

Accommodation.—From the Gurnet to the Cow Yard in the channel there is a depth of 5 fathoms at low water, and at the anchorage in Cow Yard from 5 to 14 fathoms, with plenty of room to swing. Alongside the wharves there is a depth of from 7 to 8 ft. at mean low water, and 16 ft. at mean high water. Tides rise, springs, $11\frac{1}{2}$ ft.; neaps, 8 ft. There is a life-saving station at the Gurnet and Monomer Point.

The Plymouth Cordage Co. have entered into a contract to have a channel from the Cow Yard to their wharves 200 ft. wide, and 15 ft. deep at mean low water, and basin in front of wharf to enable any steamer to float at mean low water.

Pilotage.—1 dol. per foot from the Gurnet.

Port Charges.—**Towage:**—7 c. per ton of cargo on board; at the Plymouth Cordage Co.'s wharf, 10 c. per ton of cargo. **Wharfage:**—Vessels under 100 tons, 20 c. per day; over 100 tons, 40 c. per day. **Entrance or Clearance** at Customs:—2 dols. 50 c. **Surveyor's Fee:**—3 dols. **Tonnage Dues:**—See **United States.** **Water:**—25 c. per 1,000 gallons.

PORT ARTHUR.

Port Arthur, in lat. $29^{\circ}55'$ N., long. $93^{\circ}57'$ W., is a port of entry situated on the shores of Sabine Lake, and connected with deep water by what is known as the Port Arthur Canal.

Population.—5,500.

Imports.—Mahogany, sisal, and creosote oil.

Exports.—Lumber, timber, oils, cotton and cotton-seed products, hog products, grain, rice, and rice products.

Accommodation.—At the head of the Port Arthur Canal, which is 7 miles long, 183 ft. wide and 25 ft. deep at low tide, is what is known as the turning-basin, 1,000 ft. long by 300 ft. wide. On the N.W. side of the basin there are three slips belonging to the Kansas City Southern Railway, with sufficient room to accommodate twenty large steamers. They also own a modern elevator with a capacity of 500,000 bushels of grain, a cotton-seed meal shed 100 by 500 ft., and a cotton shed 200 by 2,000 ft. Across the

The United States—Port Arthur (continued).

turning-basin on the S. side there are three oil docks for the loading of both crude and refined oils.

Pilotage.—5 dols. per foot in, and the same out. **Towage:**—27 c. per ton net reg. loaded in, and ballast out, or vice versa.

Port Charges.—Tonnage Dues:—6 c. per ton net reg. **Quarantine Dues:**—10 dols. for inspection, and 50 dols. for fumigation. Running lines, man and boat, 10 dols. per steamer. **Custom House Expenses:**—Same as other United States ports. **Brokerage:**—Agency Fee, 50 dols. **Entrance and Clearance:**—25 dols. **Freight Commission:**— $1\frac{1}{4}$ per cent. **Stevedoring:**—Loading lumber, per load (50 cub. ft.), 60 c.; timber, per load, 70 c.; general cargo, 35 c. per ton; screwing cotton, 40 c. per bale; trimming grain, 1 dol. 30 c. per 1,000 bushels; stowing cotton-seed meal, 35 c. per ton; loading staves and logs, 65 c. per ton. **Ballast:**—1 dol. per ton trimmed.

Pro Forma Charges on a British steamer of 1,352 tons net reg. :—

	Dols.	c.
Inward tonnage dues, 1,352 tons at 6 c. per ton	81	12
Custom House entrance fees	3	37
Stevedoring, 2,521 loads timber at 70 c. per load	1,764	70
Pilotage, 5 dols. per ft. in and out (each way)	150	00
Quarantine inspection	10	00
Fumigation (if in season)	50	00
Custom House clearance and stamps	4	90
Run-the-line man, for boat hire and taking lines	10	00

2,074 09 = £426 15s. 3d.

PORT HARFORD.

(See **Port San Luis**, p. 1033.)

PORTLAND (Oregon).

Portland, in lat. 45°29' N., long. 122°43' W., is on the Willamette River, a tributary of the Columbia River, 114 miles by the line of the ship channel from what was formerly the crest of the bar, at the mouth of the Columbia River.

Population.—175,000.

Exports.—Wheat, flour, barley, lumber, piling, canned and pickled salmon, etc.

Accommodation.—The Columbia River forms, during the greater part of its course, the boundary line between the States of Oregon and Washington. The draught of water on the Columbia River bar according to the last surveys is between 25 ft. 6 in. and 26 ft. 6 in. at mean low water, making on the average tide of 8 ft. (rise and fall), 33 ft. 6 in. to 34 ft., the jetty now being built by the Government and the dredger having made a great difference on the bar. The entrance to the harbour is well lighted and buoyed, and there are good lights on Tillamook Rock and on North Head, about 15 miles from Tillamook, and also a flash light on Cape Disappointment, from whence reports can be signalled, there being a wireless telegraph station at North Head. There is a sufficient depth of water in the river from Astoria to Portland to allow vessels up to 25 ft. 6 in. to 26 ft. to go up at low water. Repairs are executed. There is a wooden floating dock capable of lifting vessels 500 ft. in length and 10,000 tons d.w. Dimensions as follows: Length, 468 ft.; width between wings, 82 ft.; depth of water over keel blocks, 25 ft. There is a patent slip with a lifting power of 700 tons. There is also ample wharfage accommodation, the wharves being about

The United States—Portland (Oregon) (continued).

18,000 ft. long with 24 ft. alongside at high water. There is a staith for the shipment of coal—300 to 400 tons a day. Ballast can be discharged at the rate of 500 tons per day. Vessels must enter and clear at Astoria. There is a powerful tow-boat on the bar. In case of vessels loading wheat or flour, etc., for Europe, they have to line inside with lumber, and cover same with burlap or old sails.

Time Signals.—Chronometers can be checked. A ball is dropped at mean noon standard time of the meridian of 120° W. equal to 8 h. 0 m. 0 s. Greenwich mean time, and 23 h. 49 m. 17 s. local mean time. The signal is made from the Custom House.

Pilotage.—Bar pilotage is compulsory inwards, the rates being 5 dols. per foot draught, and 2 c. per reg. ton. Pilotage outwards is optional to the extent of half. River pilotage is optional between Astoria and Portland, and vice versa, the rates being 2 dols. per foot draught, and 2 c. per ton reg. There is a pilot schooner outside the bar with a supply of competent pilots; pilots are also often on the tugboats. Shipmasters not familiar with the entrance to Columbia River should make for the lightship, which is a few miles to the S.W. of the bar buoy, where a pilot can be picked up. Bar pilotage is remitted in full on all sailing vessels loading outwards with grain or flour for the United Kingdom or Continent.

Port Charges.—**Towage** :—From sea to Portland and to sea : Vessels of 1,500 to 1,800 tons reg. 700 dols; 2,500 to 3,000 tons reg. 850 dols. ; other sizes of vessels in proportion ; hawser when used, 15 dols. each way. **Tow-boat Charges** :—Moving in port. Sailing vessels, 20 dols. ; steamers, 25 dols. **Lighterage** :—This is not now necessary, owing to the deepening of the river, but in the event of a very deep ship requiring lighterage, the Oregon Railroad and Navigation Co. take the lighterage free on outward cargo ; the usual rate for inward cargoes 1 dol. per ton. **Tonnage Dues** :—6 c. per reg. ton (payable five times a year). **Ballast** :—60 to 75 c. per ton. Discharging ballast, 30 c. per ton ; hauling away from dock, 30 c. per ton. For vessels entering in ballast and loading outwards with grain, the ballast is hauled away from dock free of charge. **Wharfage** :—Free to ships. All goods pay wharfage of 25 c. per ton. **Ballast Logs** :—25 dols. for as many as required. **Dry Dock Charges** :—Steamers under 1,000 tons, 24 c. per ton ; 1,000 to 2,000 tons, 21 c. per ton ; 2,001 to 4,000 tons, 18 c. per ton ; over 4,000 tons, 15 c. Sailing vessels, under 600 tons, 19 c. per ton ; 1,000 tons, 17 c. per ton ; more than 1,000 tons, 15 c. per ton. The rates for steamers are reckoned on the gross tonnage, and for sailing vessels on the net reg. tonnage. **Stevedore** :—Rates according to tariff. **Water** :—For ship's use free ; vessels mostly fill their tanks going down the river, the tow-boat being willing to furnish the hose and pump. In the case of vessels coming to Astoria for orders and leaving in ballast, or in the same condition as they come in, they are charged 25 per cent. of the towage tariff, but have to pay pilotage. Orders can be given to ships off the port, ordering them to another port, for which service the pilots charge 100 dols. **Storage** :—Measurement goods, per month, 25 c. per ton of 40 cub. ft. ; heavy ditto, 25 c. per ton of 2,000 lbs. ; the warehouse to have the option of charging by weight or measurement. A fraction of a month to be charged as a month. Cement, $1\frac{1}{4}$ c. per barrel per month after the first month. **Provisions** :—Stores and provisions can be obtained at reasonable prices.

The United States—Portland (Oregon) (continued).

Pro Forma Charges on a steamer of 2,974 net reg. tons, arriving in ballast and loading 2,819,067 ft. lumber, and 1,855 tons of flour for Hong Kong and Manila :—

	Dols.	c.
Bar pilotage inward	136	98
" outward	166	98
Pilotage, Astoria to Portland	90	48
" Portland to Astoria	102	48
Customs entry, Astoria	2	00
Agency fee, Astoria	25	00
Customs entry, Portland	2	00
150 tons coal	826	30
Lighterage of coal to steamer	105	00
Moving (two tugs)	50	00
Pilotage, moving	7	50
Lining steamer for flour—		
	Dols.	c.
23,469 ft. spruce, at 9 dols.	211	22
4,663 yds. burlap, at 5 c.	233	15
Labour	153	75
	598	12
Stevedores loading 2,819,067 ft. lumber and 1,855 tons flour	3,035	83
Marine surveyor	30	00
Medical attendance	25	00
Butcher's bill	205	11
Ship-chandler	152	29
Clerks tallying cargo and measuring lumber	118	00
Lumber for stanchions	29	9
Rating two chronometers	7	00
Druggist	25	40
Customs clearance	2	70
British consular fees.	8	40
Port agency fee	100	00
Postages, telegrams, and petties.	15	00
Commission on freight, 30,797 dols. 9 c. at 3¼ per cent.	1,154	89

7,021 55=£1,444 15s. 2d.

PORTLAND (Maine).

Portland, in lat. 43°38' N., long. 70°17' W., is 106 miles N.E. of Boston.

Population.—About 55,170.

Imports.—Coal, salt, brimstone, china clay, molasses, and general merchandise.

Exports.—Grain, lumber, cooperage, cattle, and general merchandise.

Accommodation.—The harbour is large, deep, well-sheltered, and always kept open in winter, so that vessels can at all seasons come directly from the sea to the wharves. The harbour has been greatly improved by dredging. There is 30 ft. of water both in the lower and upper harbour, within a mile of the city, and plenty of room.

At the lower, or Grand Trunk Railway wharves, vessels of 30 ft. draught can be brought in at low water, and there is 30 ft. of water at low water at the loading berths, so that the largest vessel can always lie afloat. The Grand Trunk Railway system has every facility for business, having six wharves with 30 ft. of water at low water and two elevators with a capacity of 2,500,000 bushels. They can berth nine steamers at one time, and have handled seven lines of steamers at one time, besides outside steamers. They also have coal pockets equipped with the latest facilities for discharging, and can discharge from 20,000 to 25,000 tons per week.

At the other wharves in the harbour there are a few berths having from

The United States—Portland (Maine) (continued).

17 to 23 ft. of water at low tide, but mostly there is from 10 to 17 ft. at low tide. Rise of tide from 7 to 10 ft.

The Maine Central Railroad Co. have three coal discharging plants, and can discharge about 5,000 tons of coal per day. At their new plant below the bridges there is about 30 ft. at low water; at their plant through one bridge about 23 ft. at low tide; and at their plant through two bridges about 30 ft. at low tide. They are now making extensive improvements to all their docks.

There are two marine railways, the larger capable of taking vessels from 1,000 to 1,200 tons register, drawing 11 ft. The smaller one is capable of taking vessels up to 300 tons register.

Tow-boats can be had at reasonable rates.

Skilled workmen can be obtained for all kinds of repairs both to wooden and iron vessels.

Pilotage.—Pilotage is not compulsory. Good pilots can always be had by making the usual signals on approaching the port. Vessels should stand boldly in, as they can always pick up a tugboat. Rates of pilotage for steamers, 2 dols. 50 c. per ft. inward and 1 dol. 25 c. per ft. outward. For sailing vessels, 2 dols. per ft. inward and 1 dol. 25 c. per ft. outward.

Port Charges.—Tonnage Dues.—See **United States. Custom House Entry**:—2 dols. 50 c. **Surveyor's Fee**:—ree cargo, 67 c.; dutiable cargo, 3 dols. **Port-warden's Fee**:—3 dols. for inspecting hatches. **Labour**:—30 c. per hour. **Stevedoring**:—Discharging coal, 25 c. per ton; brimstone, 25 c. per ton; salt, 7 c. per hogshead of eight bushels; general cargo, 30 c. to 35 c. per ton. Ballast, 50 c. per ton. Loading grain in bulk, $\frac{1}{2}$ c. per bushel; in bags 25 c. per ton, and 1 c. per bushel additional for bagging. Lumber, 50 c. per m. **Ballast**:—Sand, 50 c. per ton; stone, 1 dol. 25 c. to 1 dol. 50 c. per ton. **Water**:—2 dols. 50 c. per 1,000 gallons from water boat. It can also be obtained at some of the wharves direct from the city waterworks at a much less rate.

There is no wharfage charge on vessels while loading or discharging cargoes at any of the wharves.

Pro Forma Charges on a British steamer of 2,531 tons net register, arriving from Europe in ballast, and leaving with a cargo of grain:—

	Dols.	c.
Custom House fees, including tonnage dues	175	27
Pilotage in	37	50
Pilotage out	30	63
Towing in harbour	20	00
Stevedore loading.	1,014	15
Water.	4	20
Lumber	104	15
Carpenter	34	30
Watchman	15	00
Inspector's stowage certificate	10	00
Consular fees	1	90
Doctor and medicines	11	75
Bag hire	426	64
Machinist	35	00
Commission on charter	402	29
Fee for attending ship's business	50	00

2,372 78 = £488 4s. 6d.

The expenses of the same steamer, loading grain a previous trip when she came from an American port in ballast, and not being obliged to pay tonnage dues, were about 2,000 dols.

The United States.

PORT LOS ANGELES.

Port Los Angeles is in lat. $34^{\circ}5'$ N., long. $118^{\circ}36'$ W.

This port is no longer frequented by ocean-going vessels, and only coast-wise trade is carried on here. (See **San Pedro**, p. 1055).

PORT ORCHARD.

Port Orchard, in lat. $47^{\circ}40'$ N., long. $122^{\circ}5'$ W., is on an arm of Puget Sound, about 14 miles W. of Seattle. The Government have constructed a large wooden dry dock of the following dimensions :—Length over all, 640 ft. ; on floor, $609\frac{1}{2}$ ft. Width of entrance, 90 ft. at high spring level. Mean high water above stone sill, 30 ft. ; mean high water mark to keel blocks, $28\frac{1}{2}$ ft. Further facilities will be provided, including a stone wharf, machine shop, storehouse, and railroad. There is a 9 ton crane, and a 40 ton crane is being constructed.

A new Government granite dock, 1,000 ft. long, is shortly to be constructed.

PORT ROYAL.

Port Royal is in lat. $32^{\circ}24'$ N., long. $80^{\circ}43'$ W.

Population.—650.

Accommodation.—The harbour is deep and well sheltered from all winds, with good holding ground. Vessels drawing 26 ft. can enter the harbour at neap tides and moor alongside the wharves. There is a depth of 30 ft. alongside the C. & W.C. Railway Wharf at high water, and 22 ft. at low water. The wharf is 1,600 ft. long. At the Phosphate Works there are wharves where 800 to 1,000 tons can be loaded per day. There is a wharf for discharge of ballast, with about 16 ft. at low water.

There is a large wooden Government dry dock here, 484 ft. long over all, 94 ft. wide at the entrance at high spring level, and 26 ft. over sill at high water spring tides.

The dock is in bad repair. There are no facilities for doing repairs.

Pilotage.—Compulsory.

		Dols. c.				Dols. c.	
Vessels of	6 ft.	18	00	Vessels of	$18\frac{1}{2}$ ft.	112	00
"	7 "	21	00	"	19 "	120	00
"	8 "	24	00	"	$19\frac{1}{2}$ "	128	00
"	9 "	27	00	"	20 "	136	50
"	10 "	31	00	"	$20\frac{1}{2}$ "	143	50
"	11 "	35	00	"	21 "	152	50
"	12 "	40	00	"	22 "	170	50
"	13 "	47	00	"	$22\frac{1}{2}$ "	180	00
"	$13\frac{1}{2}$ "	51	00	"	23 "	190	50
"	14 "	55	00	"	24 "	212	00
"	$14\frac{1}{2}$ "	60	00	"	$24\frac{1}{2}$ "	223	00
"	15 "	66	00	"	25 "	235	00
"	16 "	76	50	"	$25\frac{1}{2}$ "	249	00
"	$16\frac{1}{2}$ "	82	50	"	26 "	264	00
"	17 "	89	00	"	$26\frac{1}{2}$ "	280	00
"	18 "	104	50	"	27 "	297	00

Each drop, 10 dols. Detention, 4 dols. per day. Dockage, 4 dols.

Port Charges.—Entrance and Clearance Fees :—Same as in other

The United States—Port Royal (continued).

South Atlantic and Gulf ports. **Towage** :—10 c. per ton. **Consular Fees** :—1 dol. 87 c. in and out. **Ballast** :—25 c. per ton. **Labour** :—10 c. per hour. **Brokerage** :—2½ per cent. **Water** :—½ c. per gallon. **Wood** :—2 dols. 50 c. per cord. **Coal** :—Bunkers, 4 dols. 50 c. per ton.

Pro Forma Charges on a steamer with coal in, and ballast out, drawing 18 ft. loaded :—

	Dols.	c.
Harbour dues	10	00
Brokerage	100	00
Pilotage in	104	50
Pilotage out	31	00
Surveying hatches, 2 at 3 dols. each	6	00
Water, ½ c. per gallon, 2,000 gallons	10	00
	261	50 = £53 16s. 2d.

PORT SAN LUIS (PORT HARFORD).

Port San Luis is in lat. 35°15' N., long. 120°47' W.

Population.—100.

Exports.—Crude petroleum and its products.

Accommodation.—This harbour is situated to the northward of Point San Luis, and is well protected by a breakwater built by the U.S. Government, and which extends 2,500 ft. in an east-south-easterly direction from Point San Luis. The wharf is 3,600 ft. long with inner berth 650 ft. with depths alongside of 16 ft. to 21 ft. at low water, and outer berths 600 ft., with 30 ft. at low water. Foreign vessels or American vessels coming from foreign ports must come in ballast. No imports or exports otherwise than oil or the products of oil can be loaded or discharged.

Port Charges.—**Wharfage** :—Vessels over 500 tons, 10 dols. per day; vessel under 500 tons, 5 dols. per day. **Entrance Fees** :—2 dols. 50 c. **Tonnage Dues** :—6 c. per net reg. ton. **Clearance Fees** :—2 dols. 50 c. **Boat Hire** :—1 dol. per ton; 5 dols. per day. **Labour** :—40 c. per hour. **Water** :—1 dol. 75 c. per 1,000 cubic ft.

Pro Forma Charges on a steamer of 1,000 tons register, ballast in and a cargo of oil out, drawing 15 ft. loaded :—

	Dols.	c.
Boat hire, running lines, mooring and unmooring	20	00
Wharfage, 10 dols. per day	20	00
Water, 2,000 cubic ft. at 1 dol. 75 c.	3	50
Labour, 135 hours at 40 c.	54	00
	97	50 = £20 1s. 3d.

PORTSMOUTH (New Hampshire).

Portsmouth is in lat. 43°2' N., long. 70°49' W.

Population.—11,125.

Imports.—Coal, salt, lumber, and cement.

Exports.—Bricks, hay, and apples.

The United States—Portsmouth (New Hampshire) (continued).

Accommodation.—The harbour is easy of access, large, and well sheltered, and is often used as a harbour of refuge in bad weather. There is plenty of water at all times for the largest vessels afloat. The town is situated about three miles from the mouth of the river. The anchorage is close to the town, and is in 62 ft. at high water, and 53 ft. at low water. There is a depth of from 20 to 24 ft. at low water alongside the majority of the wharves, where there is good accommodation for vessels of 3,000 tons, but the average tonnage of vessels using the port is 1,500 tons; there is $1\frac{1}{2}$ miles of quayage with 30 feet alongside at high water. There are twenty cranes to lift from 1 to 5 tons each, two coal pockets of 1,200 and 5,000 tons capacity belonging to the Boston and Maine Railroad Co. and two other pockets each of 2,500 tons capacity. There is a steam-tug for towing purposes. Shipbuilding is carried on here, and it is a naval station. It is connected by railway with all parts of the United States and Canada.

Pilotage.—2 c. per reg. ton, for both steamers and sailing-vessels. Half pilotage compulsory.

Port Charges.—**Surveyors' Fee**:—3 dols. **Entrance Fees**:—2 dols. 50 c. **Clearance Fees**:—2 dols. 50 c. **Towage**:—In and out, vessel under 500 tons, 30 dols., vessel of 1,000 tons, 50 dols., larger vessels in proportion. **Tonnage Dues**:—See **United States**. **Ballast**:—75 c. to 1 dol. per ton. **Brokerage**:—About 2 dols. **Labour**:—35 c. per hour. **Water**:—1 c. per gallon on board. **Port-warden's Fee**:—1 dol. per visit. **Stevedore**:—25 c. per ton.

Pro Forma Charges on a steamer of 1,142 tons, from a Canadian port, with 2,500 tons cargo:—

	Dols.	c.
Tonnage dues at 3 c. per ton	34	26
Survey	3	00
Entrance	2	50
Clearance	2	50
Certificate, payment tonnage	0	20
Pilotage, in and out, about	50	00
Stevedore, discharging 2,500 tons	625	00
Ballast, 200 tons	150	00
Water	20	00

887 46 = £182 11s. 10d.

PORTSMOUTH (Virginia).

Portsmouth is in lat. 36°49' N., long. 76°18' W.

Accommodation.—There are three wharves here, with a depth of water alongside of from 23 to 28 ft.

Portsmouth is in the same maritime district as Norfolk, and all dues and charges on shipping are the same as at Norfolk.

PORT TOWNSEND.

Port Townsend, in lat. 48°7' N., long. 122°44' W., lies at the entrance of Admiralty Inlet, and is the port of entry for the Puget Sound district of Washington Territory.

The United States—Port Townsend (continued).

Population.—5,300.

Exports.—Lumber, coal, fish, and grain.

Accommodation.—Although this is a safe harbour, from its great extent it is subject to a choppy sea during strong S.E. winds. The general depth of water is from 8 to 15 fathoms, good holding ground, soft mud, when within Hudson Point. Half a mile within Hudson Point there is good anchorage in the western side of the port, off the wharf and houses, in 8 to 10 fathoms, from a $\frac{1}{4}$ to $\frac{1}{2}$ a mile from the shore. There is a depth of water at the wharves of 30 ft. Ballast can be discharged in the harbour. Repairs are undertaken.

Vessels coming from any ports against which quarantine has been declared must come here for inspection, which takes place between sunrise and sunset.

Provisions are cheap.

Pilotage.—Pilots meet incoming vessels off Point Wilson. Charge for piloting from Point Wilson to Port Townsend, and further up Sound to any port or number of ports, 150 dols. both in and out.

Port Charges.—Tonnage Dues:—See **United States. Ballast:**—35 c. per ton. **Stevedoring:**—Sailing vessels—lumber, from 1 dol. 35 c. to 1 dol. 50 c., according to cargo shipped; steamers, from 1 dol. 10 c. to 1 dol. 25 c. **Shipbroker:**—Clearance, 25 dols.

Towage.—

SINGLE-DECK VESSELS.

BETWEEN CAPE FLATTERY AND THE FOLLOWING PLACES.

Tons.	Port Angeles.	Port Townsend.	Hadlock.	Port Gamble, Port Ludlow, Roche Harbour.	Anacortes.	Bellingham, Everett, Port Madison, Seattle, Port Blakely, Shilshole Bay.*	Tacoma, Cowichan, Chemainus, Ladysmith, Blaine.	Olympia, Moodyville, Vancouver, Nanaimo, Steveston.
	dols.	dols.	dols.	dols.	dois.	dols.	dols.	dols.
150 to 250	40	65	75	85	90	95	105	135
251 „ 350	45	75	90	105	110	115	125	155
351 „ 450	50	85	102	120	128	135	145	175
451 „ 500	53	90	109	128	137	145	155	185
501 „ 550	55	95	115	135	145	155	165	195
551 „ 600	58	100	122	143	155	165	175	205
601 „ 650	60	105	128	150	163	175	185	215
651 „ 700	63	110	134	158	171	185	195	225
701 „ 750	65	115	140	165	180	195	205	235
751 „ 850	100	160	188	215	223	230	245	260
851 „ 1000	125	175	200	225	238	250	275	300
1001 „ 1200	150	200	225	250	263	275	300	325
1201 „ 1500	175	225	250	275	288	300	325	350

Docking—150 to 250 tons, \$5-00; 251 to 350, \$7-50; 351 to 450, \$10-00; 451 to 550, \$12-50; 551 to 650, \$15-00; 651 to 750, \$17-50; 751 to 850, \$20-00; 851 to 1,000, \$25-00.

Towage to or from Fraser River points above Steveston subject to special rates. * Towage from Shilshole Bay to Inner Harbour, Ballard; and Inner Harbour, Ballard, to Shilshole Bay, subject to special rates.

Hawser Charge—Vessels 500 tons and under, \$5-00 each way; hawser charge, vessels over 500 tons, \$10-00 each way.

Rate from Vancouver to Sound ports above Port Townsend, on vessels of 1,000 tons and over, same as sea rate to Sound port. Vessels towing from sea to Tacoma or Seattle and calling at Port Townsend or Port Angeles for orders will be given a direct rate. Captains to wire agent of tugs 48 hours' notice of when tug is required.

The United States—Port Townsend (continued).

BETWEEN PORT TOWNSEND AND THE FOLLOWING PLACES.									
Tons.	Hadlock.	Diamond Point.	Dungeness.	Port Gamble, Port Ludlow.	Anacortes.	Bellingham, Everett, Roche Harbour, Seattle, Port Blakely, Shilshole Bay.*	Tacoma, Blaine.	Olympia, Cowichan, Chemainus, Ladysmith.	Moodyville, Vancouver, Nanaimo, Steveston.
	dols.	dols.	dols.	dols.	dols.	dols.	dols.	dols.	dols.
150 to 250	10	10	10	25	28	30	40	70	85
251 „ 350	15	15	15	30	35	40	50	80	100
351 „ 450	17	20	20	35	43	50	60	90	115
451 „ 500	19	23	23	38	47	55	65	95	123
501 „ 550	20	25	25	40	50	60	70	100	130
551 „ 600	22	28	28	43	55	65	75	105	138
601 „ 650	23	30	30	45	60	70	80	110	145
651 „ 700	24	33	33	48	62	75	85	115	153
701 „ 750	25	35	35	50	65	80	90	120	160
751 „ 850	28	40	50	55	73	90	100	130	168
851 „ 1,000	30	50	60	60	80	100	110	135	175
1,001 „ 1,200	35	60	70	70	90	110	125	150	200
1,201 „ 1,500	40	70	80	80	103	125	150	175	225

Docking—150 to 250 tons, \$5-00; 251 to 350, \$7-50; 351 to 450, \$10-00; 451 to 550, \$12-50; 551 to 650, \$15-00; 651 to 750, \$17-50; 751 to 850, \$20-00; 851 to 1,000, \$25-00.

Towage to or from Fraser River points above Steveston subject to special rates. * *Towage* from Shilshole Bay to Inner Harbour, Ballard; and Inner Harbour, Ballard, to Shilshole Bay subject to special rates.

Hawser Charge—Vessels 500 tons and under, \$5-00 each way; hawser charge, vessels over 500 tons, \$10-00 each way.

Rate from Vancouver to Sound ports above Port Townsend, on vessels of 1,000 tons and over same as sea rate to Sound port. Vessels towing from sea to Tacoma or Seattle and calling at Port Townsend or Port Angeles for orders will be given a direct rate. Captains to wire agent of tugs 48 hours' notice of when tug is required.

BETWEEN PORT ANGELES AND THE FOLLOWING PLACES								
Tons.	Port Townsend.	Hadlock.	Port Gamble, Port Ludlow.	Anacortes.	Bellingham, Everett, Port Madison, Seattle, Port Blakely, Shilshole Bay.*	Roche Harbour.	Tacoma, Cowichan, Chemainus, Ladysmith, Blaine.	Olympia, Moodyville, Vancouver, Nanaim, Steveston.
	dols.	dols.	dols.	dols.	dols.	dols.	dols.	dols.
150 to 250	25	35	50	53	55	45	65	95
251 „ 350	30	45	60	65	70	60	80	110
351 „ 450	35	52	70	78	85	70	95	125
451 „ 500	38	57	75	83	90	75	103	133
501 „ 550	40	60	80	90	100	80	110	140
551 „ 600	43	65	85	97	108	85	118	148
601 „ 650	45	68	90	105	115	90	125	155
651 „ 700	48	72	95	110	123	95	133	163
701 „ 750	50	75	100	115	130	100	140	170
751 „ 850	60	88	115	128	140	115	155	185
851 „ 1,000	75	105	135	143	150	135	175	200
1,001 „ 1,200	100	125	150	163	175	150	200	225
1,201 „ 1,500	125	145	175	188	200	175	225	250

Docking—150 to 250 tons, \$5-00; 251 to 350, \$7-50; 351 to 450, \$10-00; 451 to 550, \$12-50; 551 to 650, \$15-00; 651 to 750, \$17-50; 751 to 850, \$20-00; 851 to 1,000, \$25-00.

Towage to or from Fraser River points above Steveston subject to special rates. * *Towage* from Shilshole Bay to Inner Harbour, Ballard; and Inner Harbour, Ballard, to Shilshole Bay subject to special rates.

The United States—Port Townsend (continued).

from Shilshole Bay to Inner Harbour, Ballard; and Inner Harbour, Ballard, to Shilshole Bay, subject to special rates.

Hawser Charge—Vessels 500 tons and under, \$5-00 each way; hawser charge, vessels over 500 tons, \$10-00 each way.

Rate from Vancouver to Sound ports above Port Townsend, on vessels of 1,000 tons and over, same as sea rate to Sound port. Vessels towing from sea to Tacoma or Seattle and calling at Port Townsend or Port Angeles for orders will be given a direct rate. Captains to wire agent of tugs 48 hours' notice of when tug is required.

DOUBLE-DECK VESSELS.

Tons.	TO OR FROM CAPE FLATTERY AND THE FOLLOWING PLACES.						
	Royal Roads, Port Angeles.	Discovery, Townsend, Diamond Point.	Hadlock.	Gamble, Ludlow.	Everett, Madison, Ladysmith, Chemainus, Seattle, Cowichan, Blakely, Bellingham.	Tacoma, Utsalady, Nanaimo, Vancouver, Moodyville, Steveston.	Comox, B.C.
	dols.	dols.	dols.	dols.	dols.	dols.	dols.
851 to 1,000 tons	125	175	200	225	250	275	300
1,001 " 1,200 "	150	200	225	250	275	300	325
1,201 " 1,500 "	175	225	250	275	300	325	350
1,501 " 1,800 "	200	250	275	300	325	350	375
1,801 " 2,000 "	225	275	300	325	350	375	400
2,001 " 2,500 "	250	300	325	350	375	400	425
2,501 " 2,750 "	275	325	350	375	400	425	450
2,751 " 3,000 "	300	350	375	400	425	450	475
3,001 " 3,500 "	325	375	400	425	450	475	500

Hawser charge, \$10-00 each way.

Towage to or from Fraser River points above Steveston subject to special rates.

Rate from Vancouver to Sound ports above Port Townsend, same as sea rate to Sound port.

Docking vessels, \$25. Vessels towing from sea to Tacoma or Seattle and calling at Port Townsend or Port Angeles for orders will be given a direct rate. Captains to wire agent of tugs 48 hours' notice of when tug is required.

Tons.	TO OR FROM PORT TOWNSEND AND THE FOLLOWING PLACES.					
	Hadlock.	Diamond, Point.	Gamble, Ludlow.	Seattle, Madison, Blakely, Bellingham, Everett.	Tacoma, Utsalady. Add \$25 to Cowichan, Ladysmith, Chemainus.	Nanaimo, Vancouver, Moodyville, Steveston. Add \$25 to Comox.
	dols.	dols.	dols.	dols.	dols.	dols.
851 to 1,000 tons	30	50	60	100	110	175
1,001 " 1,200 "	35	60	70	110	125	200
1,201 " 1,500 "	40	70	75	125	150	225
1,501 " 1,800 "	45	80	100	150	175	250
1,801 " 2,000 "	50	90	125	175	200	275
2,001 " 2,500 "	55	100	150	200	225	300
2,501 " 2,750 "	60	115	175	225	250	325
2,751 " 3,000 "	65	130	200	250	275	350
3,001 " 3,500 "	70	150	235	275	300	375

Hawser charge, \$10-00 each way.

Towage to or from Fraser River points above Steveston subject to special rates.

Rate from Vancouver to Sound ports above Port Townsend, same as sea rate to Sound port.

Docking vessels, \$25. Vessels towing from sea to Tacoma or Seattle and calling at Port Townsend or Port Angeles for orders will be given a direct rate. Captains to wire agent of tugs 48 hours' notice of when tug is required.

The United States—Port Townsend (continued).

Tons.	TO OR FROM PORT ANGELES, ROYAL ROADS, AND THE FOLLOWING PLACES.					
	Townsend, Diamond Point.	Hadlock.	Gamble, Ludlow, Chemainus, Ladysmith, Cowichan.	Everett, Seattle, Blakely, Madison, Bellingham.	Tacoma, Utsalady, Nanaimo, Vancouver, Moodyville, Steveston.	Comox, B.C.
851 to 1,000 tons	dols. 75	dols. 105	dols. 135	dols. 150	dols. 175	dols. 200
1,001 " 1,200 "	100	125	150	175	200	225
1,201 " 1,500 "	125	150	175	200	225	250
1,501 " 1,800 "	150	175	200	225	250	275
1,801 " 2,000 "	175	200	225	250	275	300
2,001 " 2,500 "	200	225	250	275	300	325
2,501 " 2,750 "	225	250	275	300	325	350
2,751 " 3,000 "	250	275	300	325	350	375
3,001 " 3,500 "	275	300	325	350	375	400

Hawser charge, \$10.00 each way.

Towage to or from Fraser River points above Steveston subject to special rates.

Rate from Vancouver to Sound ports above Port Townsend, same as sea rate to Sound ports.

Docking vessels, \$25. Vessels towing from sea to Tacoma or Seattle and calling at Port Townsend or Port Angeles for orders will be given a direct rate. Captains to wire agent of tug 48 hours' notice of when tug is required.

Pro Forma Charges on a vessel of 2,200 tons, loading lumber at Port Townsend:—

	Dols.	c.
Custom House clearance	2	70
British vice-consul, Seattle	12	50
Puget Sound Tugboat Co.	779	00
Advertising crew	4	00
Telegrams and cable	12	50
Extra insurance	31	77
Butchers	26	30
Steam launch hire	5	00
British vice-consul, outwards	21	00
Stevvedoring bill	3,414	96
Master	100	00
Brokerage	50	00
	4,459	73 = £917 12s. 9d.

PROVIDENCE.

Providence, in lat. 41°49' N., long. 71°25' W., is situated at the head of Narraganset Bay, about 30 miles from the ocean.

Population.—203,243.

Accommodation.—Numerous islets impede the entrance of the bay. Vessels drawing 25 ft. can safely enter the harbour by taking the E. passage. The average depth of water at the docks is 22 ft., soft bottom.

According to the harbour rules, all vessels approaching the harbour other than at high tide, if drawing over 22 ft. water, are obliged to anchor below the Crook until the tide shall have risen sufficiently to enable them to reach the wharves.

There is a balance dock 200 ft. long over all, 63 ft. wide at the entrance at the high spring level, and 15 ft. on the sill at high springs. The lifting power is 1,300 tons. There is a patent slip to raise 600 tons, and a smaller slip also.

Pilotage.—Compulsory.

The United States—Providence (continued).

Port Charges.—Discharging Coal:—25 c. per ton. **Ballast:**—50 c. per ton. **Dry Dock Charges:**—Carpenters and caulkers, 3 dols. 50 c. per day; labourers, 2 dols. 50 c. Hauling out, 10 c. per net ton; lay-days, 5 c. per reg. ton. **Tonnage Dues:**—See **United States.**

PUNTA GARDA.

Punta Garda is in lat. $26^{\circ}53'$ N., long. $82^{\circ}1'$ W.

Population.—1,500.

Import.—Tobacco.

Exports.—Phosphate and lumber.

Accommodation.—There is a depth of 21 ft. 6 in. at high water, of 20 ft. at low water, and of 19 ft. 6 in. at lowest spring tides.

Pilotage.—Compulsory. 2 dols. 50 c. per foot draught.

Port Charges.—**Towage:**—10 c. per gross ton in and out. **Ballast:**—25 c. per ton. **Labour:**—25 c. per hour.

RICHMOND.

Richmond, in lat. $37^{\circ}33'$ N., long. $77^{\circ}27'$ W., is situated on James River, 127 miles from the ocean at Cape Henry.

Population.—Including Manchester and suburbs, 100,000.

Accommodation.—James River has a watershed of 10,500 square miles. There is no bar at the mouth of the river, the water being 30 ft. deep and upwards at low tide from the ocean to Hampton Roads.

The depth at the entrance to the port at high water ordinary springs is 17 ft. 3 in. and at ordinary neaps 16 ft. 6 in. The depth in the port at high water ordinary springs is 17 ft., and at low water ordinary neaps 13 ft. 8 in. Rise and fall of the tide at low stages is from 3 to 4 ft., the mean being $3\frac{1}{2}$ ft. The height of river is more affected by the force and direction of the wind than by difference in spring and neap tides. The depth of water up to and at the city was to be increased to 18 ft. at low water. There are two wharves which belong to the Old Dominion and Clyde S.S. Co., and which have a depth alongside of 18 ft. at high water and 14 ft. at low water ordinary springs. There is a dock 4,000 ft. long. The lift lock, by which vessels enter, is 180 ft. by 35 ft., with 15 ft. of water on the mitre sill. The harbour is safe, and there is a daily line of ocean steamers to Norfolk and New York. The river is 400 ft. wide at Richmond, but there are points where vessels of greater length can turn round.

Pilotage.—1 dol. 50 c. per foot.

Port Charges.—**Towage:**—Coasting vessels, 10 c. per ton each way; foreign vessels, 40 c. per reg. ton. **Labourage:**—From 1 dol. 25 c. to 1 dol. 50 c. per day. **Tonnage Dues:**—3 to 6 c. per reg. ton. **Brokerage:**— $2\frac{1}{2}$ to 5 per cent. on the gross amount of freight. **Entrance and Clearance Fees:**—From 5 to 10 dols. (nothing if attended to by ship-chandler). **Water:**—Free.

REDONDO BEACH.

Redondo Beach, in lat. $33^{\circ}48'$ N., long. $118^{\circ}16'$ W., is a sub-port of Los Angeles.

The United States—Redondo Beach (continued).

Population.—1,200.

Imports.—Merchandise, lumber, and oil.

Exports.—General merchandise, fruit, and oil.

Accommodation.—This is an open roadstead, perfectly safe in ordinary weather, but with occasional gales from November to April, at which times great caution is necessary with south-westerly and westerly winds. There is good anchorage N.W. by W. $\frac{1}{2}$ Mag. off Wharf No. 1. The holding ground is good (blue clay), and there is protection by land from S. through E. to N.N.W.

There are three wharves here, with a total frontage of 1,800 ft., and a depth of water ranging from 20 to 48 ft. according to the distance from shore. Ordinary cargo can be discharged at the rates of from 400 to 600 tons per day, or 300,000 ft. B.M. of lumber or ties, or 1,500 barrels of oil per hour. Vessels can work their own cargo, or can hire the Redondo Co.'s electric hoists.

Railway connection with Santa Fé and Los Angeles.

Supplies of all kinds can be obtained at reasonable prices.

Pilotage.—No pilotage.

Port Charges.—**Dockage** :—Vessels over 1,200 tons, 14 dols. 75 c. per day. **Wharfage** :—General merchandise, 50 c. per ton; grain, 25 c. per ton; lumber, 75 c. per 1,000 ft. B.M. on mining timber and railroad ties, 60 c. per 1,000 ft. B.M. on piles and poles, $\frac{1}{2}$ c. per lineal foot. **Ballast** :—Sand, 1 dol. per ton. **Stevedore** :—25 c. per ton. **Hire of Electric Hoists** :—1 dol. per hour, including services of operator. **Hire of Lines** :—10 dols. to 15 dols. for each head line, or 5 dols. to 7 dols. 50 c. for each breast line used during discharge of vessel. **Entrance Fees** :—3 dols. **Clearance Fees** :—2 dols. 50 c. **Towage** :—Lumber vessels, 10 c. per 1,000 ft. B.M.; other vessels according to services required. **Boat Hire** :—2 dols. per day. **Labour** :—30 c. per hour. **Water** :— $\frac{1}{2}$ c. per gallon.

Pro Forma Charges on a steamer of 3,034 tons reg., with a cargo of 67,034 ft. hardwood ties, drawing 24 ft. loaded :—

	Dols.	c.
Harbour dues at 14 dols. 75 c. per day, 7 $\frac{1}{2}$ days	110	63
Boat hire, 2 days at 2 dols. per day	4	00
Water, 8,000 gallons	40	00
Hire of lines, 1 head, 1 stern, 2 in shore, 2 off shore	60	00
Hire of hoist and engineman, 82 $\frac{1}{2}$ hours	82	50
	297	13 = £31 3s. 0d.

ROCKLAND.

Rockland is in lat. 44°6' N., long. 69°9' W.

Exports.—Lime, ice, and hay.

Accommodation.—The harbour is safe and well protected. There is a depth at low water of 8 to 20 ft.; bottom mud; tides rise 10 ft. The lower wharves on the E. side have a depth alongside of 14 ft. at low water. Vessels can be repaired and refitted. There is a patent slip. Ballast must be discharged in the lower harbour by direction of the harbour master.

Pilotage.—5 to 10 dols.

The United States—Rockland (continued).

Port Charges.—Tonnage Dues:—See **United States. Stone Ballast:—**65 c. per ton; loading ballast, 20 c. per ton. **Wharfage: 50 c. to 1 dol. per day.**

SABINE.

Sabine is situated on Sabine Pass, in lat. 29°43' N., long. 93°51' W., and is the sub-port of Port Arthur.

Population.—2,500.

Imports.—Mahogany, sisal, and creosote oil.

Exports.—Lumber, timber, cotton, sulphur, and crude and refined petroleum products.

Accommodation.—The harbour is very extensive, and affords good anchorage, being 11 miles long by $\frac{1}{4}$ mile wide, the least depth at mean low tide being 25 ft. The Government has built two jetty walls over the bar, one extending about $5\frac{1}{2}$ miles from the shore on the E. side of the channel, and the west wall about 5 miles. The channel between these walls is kept dredged to a depth of 25 ft., and has a width of 80 ft. at the bottom. The bottom of the harbour and pass is mud and clay, affording good anchorage. Outside the jetties the mud is very soft and unlikely to cause damage to vessels touching it. There is a dock about 1,000 ft. long, which has a very substantial shed over it, with railway tracks running into it; also 3 petroleum wharves and a sulphur dock.

Pilotage.—4 dols. per foot in and the same out. **Towage:—**20 c. per ton net reg., loaded in and ballast out, and vice versa.

Port Charges.—Quarantine Dues:—10 dols. for inspection. Fumigation, 50 dols. **Harbour-master's Fees** (for berthing vessel and taking lines):—10 dols. per steamer. **Custom House Expenses:—**The same as other U.S. ports. **Brokerage Agency Fee:—**50 dols. **Entrance and Clearance:—**25 dol. **Freight Commission:—** $1\frac{1}{4}$ per cent. **Stevedoring:—**Loading: Lumber, 60 c. per load of 50 cub. ft.; timber, 70 c. per load; general cargo, 35 c. per ton. **Ballast:—**1 dol. per ton trimmed. **Provisions:—**Plentiful and moderate in price.

Pro Forma Charges on a British steamer of 1,352 tons net loading:—

	Dols.	c.
Inward tonnage dues, 1,352 tons at 6 c. per ton	81	12
Custom House entrance fees	3	37
Stevedoring, 2,521 loads timber at 70 c. per load	1,764	70
Pilotage, 4 dols. per foot, in and out (each way)	120	00
Quarantine inspection	10	00
Fumigation, if necessary	50	00
Custom House clearance and stamps	4	90
Harbour master	10	00

2,044 09 = £420 11s. 11d.

SAGINAW.

Saginaw is in lat. 43°26' N., long. 83°58' W.

Population.—46,610.

Imports.—Lumber and machinery.

Exports.—Iron and wood manufactures.

The United States—Saginaw (*continued*).

Accommodation.—There is a depth of 20 ft. at high water, and of 12 ft. at low water.

Port Charges.—**Entrance Fees** :—30 c. **Clearance Fees** :—20 c.

ST. ANDREW'S.

St. Andrew's is in lat. $30^{\circ}8' N.$, long. $85^{\circ}43' W.$

Population.—600.

Imports.—Provisions and clothing.

Exports.—Naval stores, lumber, oysters, and salt fish.

Accommodation.—There is 15 ft. of water on the bar and in the port 30 to 50 ft. There are two landing wharves, with a depth of 10 ft. of water alongside. The anchorage is in 3 fathoms of water, close to St. Andrew's city, which is about 9 miles from the bar. Vessels are well sheltered inside.

There is only a small local trade carried on in light draught vessels. There is one tow-boat.

Pilotage.—No licensed pilots can be obtained, and as it is necessary that strangers should be careful in entering, they should always secure the assistance of one of the fishermen living near the entrance of the bay, who will pilot vessels. **Towage** :— $12\frac{1}{2}$ c. to 15 c. per reg. ton.

ST. AUGUSTINE.

St. Augustine is in lat. $29^{\circ}55' N.$, long. $81^{\circ}23' W.$

Accommodation.—St. Augustine Inlet has a shifting bar, over which 7 ft. can generally be carried by the north, and 10 ft. by the south channel. Anchorage behind north beach in 26 ft.; 13 ft. can be taken up to the wharves of the city, which are $2\frac{1}{2}$ miles in a straight line from the bar. Rise of tide, 3 ft. to 4 ft. 9 in.

ST. HELENA SOUND.

St. Helena Sound is in lat. $32^{\circ}30' N.$, long. $80^{\circ}50' W.$

Export.—Phosphate rock.

Accommodation.—The depth of water on the bar at spring tide is 23 ft.; neaps, 19 ft.; but it is only safe for vessels of 20 ft. draught at springs, and 17 ft. at neaps. The loading ground at Bull River, which flows into St. Helena Sound is about 19 miles from the bar, and vessels able to cross can safely load there. Kean's Neck is the name of the port at the mouth of Bull River. Vessels drawing up to 15 ft. can load at the Company's dock.

The current in the river sometimes runs 5 or 6 miles an hour, and masters should look carefully after their anchors, as they are apt to drag.

Vessels coming from the West Indies or South America have to undergo a quarantine of 30 days, if arriving during the summer season; but should no sickness take place on board, after an observation of 15 days they are allowed to discharge their ballast and proceed to the loading place. This by permission of the sanitary authorities at Charleston. No communication, however, is allowed with the shore until the 30 days have expired.

A steam-tug can be obtained if necessary. Ballast must be landed

The United States—St. Helena Sound (continued).

Pilotage.—A pilot should always be employed by a stranger.

RATES OF PILOTAGE—RIVER PILOTAGE.

From Bar Buoy to Port Royal or Beaufort, one-half rates.

	Dols.	c.
From Bay Point to Port Royal	15	00
" " to Beaufort	20	00
" " to Wilson's Mill	22	00
" Port Royal to Beaufort	10	00
" " to Wilson's Mill	12	00
" " to Bull River (without steam)	30	00
" " to Bull River (with steam)	15	00
" Beaufort to Bull River (without steam)	25	00
" " to Bull River (with steam)	12	50
" " or Port Royal to Savannah	25	00

BAR PILOTAGE.

	Dols.	c.		Dols.	c.
For 6 ft. or under	18	00	For 17 feet or under	90	50
" 7 "	21	00	" 17½ "	97	41
" 8 "	24	00	" 18 "	104	63
" 9 "	27	60	" 18½ "	112	16
" 10 "	31	30	" 19 "	120	00
" 11 "	35	40	" 19½ "	128	15
" 12 "	40	00	" 20 "	136	61
" 12½ "	43	50	" 20½ "	145	38
" 13 "	47	31	" 21 "	154	46
" 13½ "	51	43	" 21½ "	163	85
" 14 "	55	86	" 22 "	173	55
" 14½ "	60	60	" 22½ "	183	56
" 15 "	65	96	" 23 "	193	87
" 15½ "	71	63	" 23½ "	204	49
" 16 "	77	61	" 24 "	215	42
" 16½ "	83	90	Shifting mooring, each move	10	00

Port Charges.—**Mooring** :—10 dols. each time. **Loading and Discharging Ballast** :—25 c. per ton. **Provisions** :—Fresh provisions can be obtained at moderate prices. **Water** :—Fresh water of good quality, ½ c. per gallon.

Pro Forma Charges on a vessel of 589 tons reg., ballast in and phosphate out :—

	Dols.	c.
100 planks for stowing	117	98
2½ cords of wood for stowing	8	00
Visit of health-officer	3	00
Customs dues, in and out	183	17
Pilotage, 13 ft. in, 17 ft. out	150	50
Commission, 2½ per cent.	28	13
Insurance, ½ per cent.	17	21

507 99 = £104 10s. 4d.

ST. MARK'S.

St. Mark's is in lat. 30°12' N., long. 84°14' W.

This place is no longer of any interest to shippers, no shipping being done here.

ST. MARY'S.

St. Mary's is in lat. 30°43' N., long. 81°39' W.

Exports.—Lumber and cross-ties.

Accommodation.—Vessels drawing 25 ft. can safely cross the

The United States—St. Mary's (continued).

bar at high water spring tides, and proceed to the mouth of St. Mary's River, from there drawing $16\frac{1}{2}$ ft., and at the wharves at the town 18 to 20 ft. There is plenty of water close to the town, 19 to 30 ft.

Pilotage.—5 dols. per foot over 13 ft. draught.

Port Charges.—**Harbour Fees** :—4 c. per running foot. **Bill of Health** :—20 c. **Entrance Fee** :—3 dols. 37 c. **Clearance Fee** :—2 dols. 50 c. **Water** :— $\frac{1}{2}$ c. per gal. **Agency Fee** :—5 c. per net ton. **Quarantine Fees** :—5 dols. during season. **Stevedore** :—50 c. to 65 c. per 1,000 sup. ft. 1 dol. 20 c. per standard.

ST. MICHAEL.

St. Michael is in lat. $63^{\circ}10'$ N., long. $162^{\circ}15'$ W.

Population.—500.

Imports.—Provisions.

Export.—Gold dust.

Accommodation.—There is a depth of 25 to 30 ft. of water at the anchorage. Rise and fall of the tide is approximately 5 ft. There are no wharves here, and cargo is discharged by means of lighters.

Port Charges.—**Tonnage Dues** :—See **United States. Entrance Fees** :—5 dols. 50 c. **Clearance Fees** :—2 dols. 70 c. **Labour** :—1 dol. per hour.

SALEM.

Salem, in lat. $42^{\circ}30'$ N., long. $70^{\circ}55'$ W. is about 15 miles N.E. of Boston.

Population.—36,000.

Imports.—Bark, coal, fish, lumber, plaster, potatoes, etc.

Accommodation.—Salem offers good anchorage and is a refuge for vessels in bad weather. Springs rise 11 ft.; neaps range $7\frac{1}{2}$ ft. Vessels of the largest size can anchor in the outer harbour within 1 mile of the wharves, in 5 to 6 fathoms of water, muddy bottom. Vessels of 22 ft. draught can anchor and lay afloat $\frac{1}{3}$ of a mile from the principal wharves above water. There is plenty of room for 100 vessels of lighter draught (12 ft. to lay afloat at low water above the lower wharf. Vessels drawing 22 ft. water can now come alongside the lower wharf.

Pilotage.—Harbour pilotage compulsory for vessels from foreign ports that find a market, otherwise not.

Port Charges.—**Towage** :—2 c. per ton of cargo within 5 miles of wharves. **Ballast** :—60 to 70 c. per ton according to quality. **Stevedore** :—Discharging cargo, 25 c. per ton. **Water** :—25 c. per 100 gallons. There are no harbour dues. **Custom House Fees** :—Entering, 5 dols. 50 c. above, 3 dols. below, 100 tons, with dutiable cargo, and 3 dols. 17 c. above, 2 dols. 17 c. below, 100 tons, with free cargo. Water and ship's supplies abundant.

SAN DIEGO HARBOUR.

San Diego is in lat. $32^{\circ}47'$ N., long. $117^{\circ}3'$ W. Climate good.

Population.—30,000.

The United States—San Diego Harbour (continued).

Imports.—Coal, coke, pig-iron, and cement.

Exports.—Grain, wool, hides, honey, and fruits.

Accommodation.—The depth of water on the bar at the entrance is $24\frac{1}{2}$ ft. at mean low tides, and $31\frac{1}{2}$ ft. at spring high tides. The average rise and fall of the tides is $4\frac{1}{2}$ ft., and of spring tides 7 ft.

The harbour is about 10 miles long, and from 1 to 2 miles wide, with a ship channel from $\frac{1}{2}$ to $\frac{5}{8}$ of a mile wide. The wharves all run into deep water, with from 20 to 28 ft. alongside at mean low tide. Vessels can moor in any weather with ordinary fasts; safe anchorage in any part of the channel. The harbour is so completely land-locked and protected from the wind that there is very little sea, even during the heaviest gales.

This is one of the only safe harbours south of San Francisco, and has facilities for the repairing of vessels arriving in distress.

There is a patent slip with a cradle 245 ft. long and a lifting power of 1,000 tons. Vessels destined for this port can, when seeking charters, have the choice of San Francisco, Portland, Puget Sound lumber ports, Tacoma, or the west coast nitrate ports.

San Diego is the natural port of entry for Southern California and the immense adjacent territories.

Pilotage.—All vessels under 500 tons register, 5 dols. per foot draught; and all vessels over 500 tons reg., 5 dols. per foot draught and 4 c. per reg. ton. When a vessel is spoken, inward or outward bound, and the services of a pilot are declined, one-half of the above rates shall be paid. There is always a boat cruising outside the bar, and as the pilots are regulated in their service by a Board of Pilot Commissioners it makes no difference which pilot is employed.

Port Charges.—

TOWAGE.

PER NET REG. TON.	400 and under 600	600 and under 800.	800 and under 1,000.	1,000 and under 1,250.	1,250 and under 1,500.	1,500 and under 1,750.	1,750 and under 2,000.	2,000 and under 2,250.	2,250 and under 2,500.
to Sea—	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
San Diego to Whistling Buoy	50	65	75	90	100	110	120	130	140
towed from Whistling Buoy to San Diego, charge same as to sea.									
loading and unloading included in these rates if vessel proceeds immediately to or from dock.									
loading and unloading . .	15	17½	20	22½	25	27½	30	32½	35
Additional to above if to or from National City . .	10	12½	15	17	20	22½	25	27½	30
San Diego to or from National City	20	25	30	35	40	45	50	55	60
single moves from wharf to wharf, San Diego or Coronado	8	15	17	20	22	24	26	28	30

The United States—San Diego Harbour (continued).

To San Francisco, 1 dol. per ton, if 1,000 tons or over. Use of hawser to San Francisco, 50 dols. Use of hawser to San Diego Bay, 10 dols.

Dock Dues:—1 c. per ton for the first 200 tons, and three-eighths of a cent. for each additional ton, being one-half San Francisco rates. No charge made for Sundays or holidays, but full rates are charged on all other days while the vessel occupies a berth.

Discharging Cargo:—The same rules governing the discharge of cargo that apply in San Francisco are in vogue at this port.

Weighing:—Same custom as at San Francisco. A Customs officer has full charge of the weighing, the ship and the receiver of the cargo each having a representative at hand to check the weights. A weighing charge of $12\frac{1}{2}$ c. per ton is made, of which amount the ship pays one-half. Freight payable upon the Custom House returns of weights in cases of coal, pig-iron, coke, and goods of that character.

Stevedore Rates:—General merchandise, weight ^{and} measurement, per ton of 2,240 lb. or 40 cub. ft. 60 c. net; coal and ballast, per ton, 50 c. net; pig-iron, per ton, 60 c.; railroad iron, coke, and bricks, per ton, 75 c. net; scrap iron, per ton, 1 dol. net; cement and wheat, 45 c. net.

Water is supplied at the dock at $\frac{1}{2}$ c. per gallon of 231 cub. in. When water is pumped aboard by a tug while the vessel is in the stream, the rate is 1 c. per gallon. The quality of the water is excellent.

Ballast is brought alongside in barges and is hoisted aboard by steam power; sand, 1 dol. per ton dumped on board; rock, 2 dols. 25 c. per ton.

Dry Dock Charges:—Steamers: From 100 to 600 tons, first day, 50 c. per gross ton; lay-days, $12\frac{1}{2}$ c. per ton; under 100 tons, 50 dols. per day. Sailing vessels, first day, 25 c. per net ton; lay-days, 10 c. per ton. Cargo is charged for at the same rate as tonnage. No charge for ballast.

Bunker Coal from 9 dols. 50 c. to 12 dols. per ton; can be furnished rapidly in any quantity.

Pro Forma Charges on a vessel of 1,850 tons with cargo of coal in, and ballast out; in port 21 days:—

	Dols.	c.
Customs fees, in and out	7	90
Tonnage tax, 1,850 tons, at 6 c.	111	00
British Vice-Consul's fees, in and out	5	00
Advertising crew	3	00
One-half weighing fee, 3,200 tons coal, at $6\frac{1}{2}$ c.	200	00
Inward pilotage, 21 ft. at 5 dols., 105 dols.; 1,850 tons at 4 c., 74 dols.	179	00
Outward pilotage, 11 ft. at 5 dols., 55 dols.; 1,850 tons at 4 c., 74 dols.	129	00
900 tons ballast, at 1 dol. per ton	900	00
Towage from and to sea, docking and undocking	270	00
Dockage, 10 days at 8 dols. 18 c.	81	80
Water, 5,000 gallons at $\frac{1}{2}$ c.	25	00
Rent of donkey falls and gear	16	00
Discharging 3,200 tons of coal at 50 c.	1,600	00
Cables and postage	7	50
Cash to captain	200	00
Provisions	65	00
Meat and vegetables	100	00
Clothing for seamen	158	00
Port agency	100	00
Address commission, at $2\frac{1}{2}$ per cent.	288	00

4,446 20 = £914 17s. 0d

The United States—San Diego Harbour (continued).

Pro Forma Charges on a vessel of 2,363 tons reg., with a cargo of 3,604 tons of coal in, and 3,614 tons grain out; total days in port, 44 :—

	Dols.	c.	Dols.	c.
Dockage, 27 days at 10 dols. 12 c. per diem.	273	24		
Customs fees, in and out	10	60		
Tonnage duty, 2,363 tons at 6 c.	141	78		
British Vice-Consul's fees, in and out	9	90		
Pilotage, in and out	414	00		
Towages from and to sea, and in port	345	00		
One-half weighing fees, 3,604 $\frac{65}{100}$ tons coal at 6 $\frac{1}{4}$ c.	225	29		
Discharging 3,604 $\frac{65}{100}$ tons coal at 50 c.	1,802	32		
Loading 3,614 tons grain at 45 c.	1,626	30		
Lining ship, 30,686 ft. lumber at 15 dols. 50 c.	475	63		
„ labour and nails	74	37		
			550	00
Surveyor's fees			45	00
Stores, bread at 4 c.	192	25		
„ provisions and chandlery	604	78		
„ meats	318	60		
„ vegetables	47	14		
„ fish	7	30		
„ water	38	63		
			1,208	70
Sundries, advertising crew	3	00		
„ rent of donkey falls	18	00		
„ repairs	113	56		
„ paints	76	95		
„ sawdust	3	00		
„ drugs	3	00		
„ port physician	27	00		
„ boat hire	6	00		
„ rating chronometer	2	50		
„ cables and postages	10	86		
			263	87
Address commission, 11,679 dols. 5 c. at 2 $\frac{1}{2}$ per cent.	291	97		
Commission on outward freight, 3,614 $\frac{340}{3240}$ tons at 27s. 6d., £4,969 9s. 2d.; at 4 dols. 86 c., 24,151 dols. 57 c. at 5 per cent.	1,207	57		
Cash to captain	589	54		
Port agency	100	00		
			9,105	08 = £1,873 9s. 8d.

SAN FRANCISCO.

San Francisco is in lat. 37°43' N., long. 122°22' W. Distance by sea from Liverpool, 13,600.

Population.—450,000.

Imports.—Wines, silks, velvets, cloths, toys, ornamental glass, china-ware, chemicals, machinery, canned goods, tin, iron and steel, boots and shoes, cotton and woollen goods, raw cotton, rice, sugar, tropical fruits, etc.

Exports.—Wines, brandy, canned fruits, dried fruits, grain, beans, nuts, wool, honey, hides, asphalt, fuel oil, manufactured redwood, lumber, canned salmon, etc.

Accommodation.—Vessels of the largest size can safely enter, the least depth of water on the bar is 5 $\frac{1}{2}$ fathoms. A lightship is placed 3 miles outside the bar. The north channel has a minimum depth of 6 $\frac{3}{4}$ fathoms, it has no bar, and can be used by steamers and sailing vessels in tow.

The United States—San Francisco (continued).

DIMENSIONS OF THE PRINCIPAL DRY DOCKS AND SLIPS.

Situation or name of Dock.	Length in feet over all.	Width of Entrance in feet at high water ordinary springs level.	Depth on Sill in feet at high ordinary springs.	Lifting Power in tons.
Hunter's Point Dry Dock Co., No. 1 .	490	82	22	—
Hunter's Point Dry Dock Co., No. 2 .	750	103	30	—
Mare Island, U.S. Government, Stone	510	79	27½	—
Mare Island, U.S. Government, Wood	350	92	16	—
Mare Island (building)	745	102	30	—
Floating dock at Hunter's Point. Dry				
Dock Co., No. 1	210	64	15	1,500
Floating ditto, No. 2	301	44	16	2,000
Floating ditto, No. 3	271	62	18 (on blocks)	2,000
Hydraulic Union Iron Works	446	62	20 (on blocks)	4,000
Patent Slip	187 (cradle)	50	Forward 11	1,000
ditto	150 "	40	Aft 16	
ditto	161 "	40	Forward 7	400
			Forward 10½	
			Aft 15	600
Alameda Marine Rail	350 "	—	Forward 17	
			Aft 18	4,000

Grain cargoes are loaded at Port Costa, which is about 25 miles N. of San Francisco. There is storage capacity for 100,000 tons of grain. There is frontage to these warehouses of 2,300 ft., and a minimum depth of water of 26 ft. General cargoes, consisting of canned salmon, fruits, and bark, are loaded at San Francisco. Refined and crude oils are loaded at Port Richmond and Orient wharf.

San Francisco has a frontage on the water devoted to commercial purposes of 4¾ miles. The total number of miles of wharfage is 9¾, exclusive of bulkheads, and the ten proposed new piers. There are ten piers, each 800 ft. long, and 26 piers, each 600 ft. long; eight passenger ferry slips and four car ferry slips. The present piers give accommodation at one time for 220 vessels at an average of 250 ft. to each vessel. The total length of berth room is 41,821 ft. The total length of bulkhead room between piers is 8,785 ft. The increased berth accommodation when the new piers are constructed will be 7,283 ft., which will give thirty-six berths each 200 ft long. At Point San Pablo wharf there are five large bunkers, with steam hoists for coal.

REGULATIONS CONCERNING DELIVERY OF MERCHANDISE, PAYMENT OF FREIGHT, ETC.

When no express stipulation exists per bill of lading, goods are to be considered as deliverable on shore.

Freight on all goods to be paid or secured to the satisfaction of the captain or consignee prior to delivery.

After delivery to the purchaser of merchandise sold, no claims for damage, deficiency, or other cause, shall be admissible, unless made within 3 days; no such claims shall be admissible after goods sold and delivered have once left the city.

When foreign bills of lading do not expressly stipulate the payment of freight in a specific coin, foreign currency shall be reckoned according

The United States—San Francisco (*continued*).

to the United States value thereof, and payment may be made in any U.S. legal tender.

When foreign bills of lading expressly stipulate that freight shall be paid in a specific coin, then the same must be procured, if required, or its equivalent given—the rate to be determined by the current value at the time in San Francisco.

Where no special agreement is contained in a charter-party, lay-days shall commence as follows : For vessels from foreign ports with general cargo, as soon as the vessel is in her discharging berth, and a general order has been issued by the Custom House ; for vessels with coal from Atlantic or Australian ports, five running days after arrival, provided that a discharging berth can be procured. In the case of coal-laden vessels, when no special quantity is fixed by the charter-party, the minimum quantity to be discharged per working day shall be 150 tons. In the case of grain-loading vessels, when the charterer does not furnish stiffening within 48 hours from the time notice is given him by the captain or consignee, the time lost should count as lay-days on the charter.

Tare on Bags.—Wool is almost invariably packed in new sacks which weigh 3 lb. When it is reshipped to a long distance from this port it is sometimes covered with an extra sack. In regard to China sugar, practically none of the raw sugar is imported now ; the sugar which comes from China is all refined and comes in cotton sacks, gross weight 100 lb., the allowance for tare being 1½ lb. On sugar from Honolulu 1 lb. per sack is the usual weight. All other rates of tare are to be allowed as by custom in New York, except when otherwise provided.

Rate of Discharge.—For vessels loaded with general cargo, when no special quantity is fixed by the charter-party, the minimum quantity to be discharged per weather working day shall be 200 tons ; for coal-laden vessels, 150 tons.

APPOINTMENT OF SURVEYORS AND APPRAISERS.

In all cases of average, whether general or particular, on hull or cargo, the selection and appointment of surveyors and appraisers shall be agreed upon beforehand, by and between the insured or claimants in average, or their representatives on the one side, and the representatives of the insurers on the other ; and the services of the persons so appointed shall be understood to be wholly disinterested as between all parties. No representative of underwriters shall be expected to certify, approve, or accept any surveys or appraisements made in contravention of this rule, but such documents shall be deemed to be wholly *ex parte* in character, and, as such, open to criticism, or liable to be rejected. No ship carpenter, rigger, or other mechanic who may have served on a survey, shall be employed to make the repairs, or any portion thereof.

COMMISSIONS ON PARTIAL LOSS.

All commissions actually paid in a foreign or domestic port shall be chargeable, as heretofore, to the various interests adjusted upon. But no other commissions shall be chargeable against insurers on disbursements in partial or salvage losses ; nor in general average, when ship and cargo belong to the same owners ; nor in any other case when no such commissions have been actually paid, and when no charge therefor would be customary or collectable in the ordinary course of the business of the insured, had no disaster occurred.

The United States—San Francisco (continued).

HARBOUR RULES AND REGULATIONS.

Dockage to commence upon a vessel making fast to the wharf, and to conclude when she hauls out.

Vessels loading and ballasting pay half the dockage rates. No allowance to be made for Sundays, holidays, or rainy days.

Outside berths, including storeships, or other vessels receiving or discharging cargo, half rates of dockage.

Vessels shall rig in jib, flying jib, and spanker booms, when required by wharfinger (seldom necessary), and shall also haul or change berths, at their expense, by his direction.

All goods landed upon the wharf, and taken thence in lighters or other conveyance (excepting such as shall be carried by the Toll Station, and there pay the regular rates), $6\frac{1}{4}$ c. per ton wharfage.

All goods landed on the wharf from lighters, 5 c. per ton wharfage.

All goods received or discharged by vessels (lying alongside the wharf) from or into lighters, $6\frac{1}{4}$ c. per ton wharfage.

No merchandise will be allowed to remain under the wharf over night without permission of the wharfinger, and then only at the risk of the owner.

Time Signals.—Chronometers can be checked. A ball is hoisted on the tower of the New Ferry House at 11 h. 55 m. a.m. and dropped at noon mean time of the 120th meridian west from Greenwich, equal to 8 h. 0 m. 0 s. Greenwich mean time, and 23 h. 50 m. 25.6 s. local mean time.

Pilotage.—In and out of the harbour: Vessels under 500 tons, 3 dols. per foot draught; vessels over 500 tons, 3 dols. per foot draught and 3 c. per ton for each ton reg. When a vessel is spoken within 3 miles distance of a pilot boat, by either the flying Jack by day or a torch by night, a speaking is thus constituted, and the above rates must be paid whether the services of a pilot are hired or not. In all cases where inward bound vessels are not spoken until inside the bar, the rates of pilotage are reduced 50 per cent. Vessels engaged in whaling or fishing trades are exempt from all pilotage, except where a pilot is actually employed.

There are two pilot boats cruising outside the bar at all times.

Port Charges.—Tonnage Dues:—See **United States. Stevedoring:**—Discharging—

	Dols.	c.
Coal—Mare Island Navy Yard	0	50
Coal, cement, and ballast	0	45
Sugar—Java and Philippines	0	50
Pig iron, chalk, and cliff stone	0	50
Sheet iron or bar iron, under 3 in. in diameter, under 100 tons	1	00
Sheet iron or bar iron, under 3 in. in diameter, over 100 tons	0	75
Railroad iron	0	60
Coke, boiler plates, and scrap iron	0	90
Jute and seeds—40 cub. ft.	0	35
Nitrate, rock salt discharged in boxes, sulphate of ammonia, fertilizer, shale and sulphur	0	45
Glass and fire brick	0	70
Bar iron, 3 in. or over, structural iron, tie plates, angles, beams, girders, blooms	1	25
Slab, block marble, and machinery, up to 2 tons	1	50
Slab, block marble, and machinery, or any weights over 2 tons, in quantities over 200 tons	2	00
Weights over 2 tons and in quantities under 200 tons, general merchandise, weight and measurement	0	45

All above weights of 2,240 lb. to ton unless otherwise specified.

The United States—San Francisco (continued).

Loading :—

	Dols. c.
Wheat—2,240 lb.	0 35
Barley, beans, and flour—2,000 lb.	0 35
Bran—40 cub. ft.	0 35
Canned and bl. salmon—2,240 lb.	0 50
Canned fruit and borax—2,000 lb.	0 50
Orchilla and Pulu, general merchandise, 40 cub. ft.	0 45
Wine, tallow, asphalt in barrels—2,000 lb.	0 75
Scrap iron—2,000 lb.	0 90
Lumber, San Francisco and Eureka, per 1,000 ft.	1 40
Ties, San Francisco—per 1,000 ft.	0 85
Eureka—per 1,000 ft.	1 00
Oakland or Stream, 10 c. extra.	
All stiffening of grain	0 45
Lighterage when required	0 50
Hauling away ballast from ship at dock at San Francisco	0 45
Lightering away ballast from ship	0 75

Discharging and loading cross bunkers, side pockets, fore and after peaks and lazarettes or tanks, 10 c. per ton or 10 c. per 1,000 ft. extra on above rates.

Ballast :—

	Dols. c.
Supplied and put on board—2,000 lb.	0 80
Lighterage, when required	0 75
Hauling ballast, where carts can be used, from the City wharf	0 45
Hauling ballast where lighters must be used	0 75

Entrance Fees :—

Survey	3 00
Entry	2 50
Official certificate and oath.	0 20

Clearance Fees :—

Clearance	2 50
Official certificate and oath	0 20
Post entry, if any	2 00

Surveyor's Fees :—Loading, from 20 to 30 dols. **Port-warden's Fee** for general cargo, 75 dols. **Boat Hire :—**5 dols. per day, or 1 dol. per trip.

Agency Fee :—According to agreement. **Water :—** $\frac{1}{2}$ c. per gallon, in stream; from State wharf, 1 dol. 50 c. per thousand gallons. **Medical**

Attendance :—While in port, any length of time, about 40 dol. **Commissions** inward and outward as per charter. **Provisions :—**All sorts, of good

quality, at reasonable rates. Fresh meat, about 10 c. per lb.

Clerking general cargoes, 4 dols. per day; coals, 5 dols. per day. **Labour :—**

5 dols. per day.

RATES OF DOCKAGE.

Each rate is for a day of twenty-four hours, or any part thereof.

1. For all ocean vessels, steam or sail, and all sail vessels, navigating the Bay of San Francisco, and the rivers and other waters flowing into it, of 200 net reg. tons or under, 2 c. per ton; for all such vessels of over 200 net reg. tons, 4 dols. for the first 200 tons, and $\frac{3}{4}$ of a cent. for each additional ton.

2. Vessels while taking in cargo, or receiving or discharging ballast, or lying idle, or occupying outside berths, or moored in docks, slips, basins, or canals, are subject only to half rates of dockage; provided that vessels not used for carrying freight or passengers shall not be entitled to such half rates.

The United States—San Francisco (continued).

TOWAGE TARIFF.

MOVEMENTS.	RATES IN DOLLARS ON NET REGISTERED TONNAGE.									
	Under 1,000	1,000 and under 1,250	1,250 and under 1,500	1,500 and under 1,750	1,750 and under 2,000	2,000 and under 2,250	2,250 and under 2,500	2,500 and under 2,750	2,750 and under 3,000	3,000 and up- ward
1.—Single moves along City Front (including Mission Rock)	20	25	27½	30	35	37½	45	50	60	65
2.—From Stream or City Front (incl. Mission Rock) to sea	75	95	100	115	125	135	155	175	200	230
3.—From Oakland Railroad Wharves, Upper Gas Works, Union Iron Works, Hunter's Point, or Sausalito to direct to sea	95	105	120	130	145	155	170	185	235	275
4.—To or from Stream or City Front (incl. Mission Rock) and Upper Gas Works, Union Iron Works, Hunter's Point, or Sausalito, 50 per cent. additional on rate when vessel docked at Sausalito	27½	30	40	45	55	60	70	75	80	90
5.—To or from Stream or City Front (incl. Mission Rock) and Oakland Railroad Wharves	37½	45	50	55	65	70	75	85	100	115
6.—To or from Oakland Railroad Wharves or Sausalito, and Upper Gas Works, Union Iron Works, or Hunter's Point	50	55	60	70	75	80	85	90	125	140
7.—To or from City Front and Oakland Harbour	60	70	75	85	85	90	90	95	100	110
8.—To or from Upper Gas Works, or Union Iron Works and Hunter's Point	27½	30	40	45	55	60	70	75	80	95
9.—To or from Stream or City Front, Point Richmond, Quarantine Hulk, or Cal. City	55	60	65	70	75	80	85	95	105	115
10.—To or from Stream and City Front and Point San Pablo	60	65	72½	77½	82½	87½	90	100	122½	137½
11.—From Stream or City Front and Vallejo, Selby's, Crockett, Port Costa, or Wheat Port	90	105	125	135	150	160	170	175	250	285
12.—From Vallejo, Selby's, Crockett's, Port Costa or Wheat Port to Stream	90	105	125	135	150	160	170	175	250	285
13.—From Oakland Railroad Wharves, Sausalito, Upper Gas Works, Union Iron Works, or Hunter's Point and Vallejo, Selby's, Crockett's, Port Costa, or Wheat Port	110	130	140	150	160	180	190	200	270	310

Should more than one tug be required to dock a ship under unfavourable conditions of wind or tide, rate and a half to be charged.

Charges at dry docks at Hunter's Point :—

STEAM VESSELS (ON GROSS TONNAGE).

	First Day.	Lay-Days.	
		Minimum 30 days.	
From 100 to 3,000 tons	40 c. per ton	20 c. per ton.	
" 3,001 " 4,000 "	30 c. "	20 c. "	
" 4,001 " 6,000 "	20 c. "	20 c. "	

SAILING VESSELS (ON NET REGISTER TONNAGE).

	First Day.	Lay-Days.	
		Minimum 30 days.	
	Dols. c.	Dols. c.	
From 120 to 600 tons	0 25 per ton	0 15 per ton.	
" 601 " 750 "	150 00 " day	75 00 " day.	
Over 750 tons	0 20 " ton	0 10 " ton.	
Under 120 tons, 30 dols. per day.			

The United States—San Francisco (continued).

Cargo charged for at the same rate as tonnage. No charge for ballast. Wrecked vessels subject to additional charges. No vessel, sail or steam, taken out for less than 30 dols. per day.

RATES OF COMMISSION AND BROKERAGE TO BE CHARGED WHERE NO EXPRESS AGREEMENT TO THE CONTRARY EXISTS.

As Revised and Adopted by the Chamber of Commerce of San Francisco, May 9, 1871, and Amended to date, 1908.

Commission on purchase of stocks, bonds, and all kinds of securities, including the drawing of bills, for payment of same	1	per cent.
On sale of stocks, bonds, and all kinds of securities, with guarantee of sale and remittance in bill	1	"
(But in this and all other cases, where no charge is made for guarantee of Bill of Exchange, the party shall remit in first-class paper, without guarantee, unless the bill be endorsed by him.)		
On purchase or sale of specie, gold dust, or bullion, on amounts not exceeding 20,000 dols.	1	"
On purchase or sale of specie, gold dust, or bullion, on any excess over 20,000 dols.	0½	"
For drawing or endorsing bills of exchange	1½	"
On sale of bills of exchange without endorsement	1	"
On sale of merchandise from domestic Atlantic ports, with guarantee	5	"
On sale of merchandise from foreign ports, with guarantee	7½	"
On goods received on consignment, and afterwards withdrawn on invoice cost . (The receipt of the bill of lading to be considered equivalent to receipt of the goods.)	2½	"
On purchase and shipment of merchandise with funds in hand, on cost and charges when not exceeding 2,500 dols.	5	"
On purchase and shipment of merchandise with funds in hand, on excess over 2,500 dols.	3½	"
On purchase and shipment of merchandise without funds in hand, on cost and charges	5	"
For collecting and remitting delayed or litigated accounts	10	"
For collecting general claims	2½	"
For collecting and paying or remitting money from which no other commission is derived	1	"
For collecting freight by vessels from domestic Atlantic ports, on amount of freight list or charter-party	2½	"
For collecting freight by vessels from foreign ports, on amount collected	2½	"
For attending to general average matters and collecting contributions, on the first 10,000 dols., or any smaller amount	5	"
On any excess over 10,000 to 30,000 dols.	2½	"
On any excess over 30,000 dols.	1	"
(A deposit to cover probable amount of contribution, or security to the satisfaction of the merchant attending to the matter, to be furnished by the claimant of goods.)		
For landing and re-shipping goods at this port from vessels in distress, on market value	1½	"
(A merchant entitled to such commission being held in all cases to have assumed the responsibility of the safe keeping of the cargo, except as to damage resulting from natural accidents.)		
For accepting and paying a bottomry or respondentia bond (Interest to be also allowed for the time used.)	2½	"
On purchase or sale of vessels	2½	"
For entering, clearing, and transacting ship's business, on vessels with cargo or passengers :—		
On vessels under 500 tons register	Dols.	
" of 500 to 1,000 tons register	100	
" over 1,000 tons register	150	
" over 1,000 tons register	200	
(If the vessel be chartered and cleared by different consignees, the commission not to exceed one-half of the above rates to each.)		
For disbursements of vessels by consignees with funds in hand	2½	per cent.
" " without funds in hand	5	"
For procuring freight or passengers	5	"
For chartering vessels, on amount of freight, actual or estimated, to be considered due when the charter is effected	5	"
(But no charter to be considered as effected or binding until a memorandum, or one of the copies of the charter-party, has been signed. Where no special rate of exchange is stipulated on outward charters payable in sterling, the pound sterling to be valued at 4 dols. 86 c. U.S. gold coin.)		
On giving bonds for vessels under attachment in litigated cases, on amount of liability	2½	"

RATES OF STORAGE ON MERCHANDISE.

On bonded goods in warehouse, per month, $37\frac{1}{2}$ to $62\frac{1}{2}$ c. per ton of 40 cub. ft., or of 2,000 lb., as per class; except plate glass, the rate on which is 1 dol. per ton. On bonded goods stored outside, or in yard or warehouse, $37\frac{1}{2}$ c. per ton of 40 cub. ft. On free goods, as per class, 25 to $37\frac{1}{2}$ c. per ton of 40 cu. ft. In all cases a fraction of a month to be charged as a month.

	Dols.	c.
British Consul's fees	1	25
Merchants' exchange	5	00
Entrance fees	5	50
Tonnage dues	68	34
Quarantine fees	7	50
The "Guide," reporting	1	00
Advertising crew	2	50
Pilotage inward	148	06
Towage in from sea	80	00
Plumber	11	00
Port physician	47	75
Rating chronometer	5	75
Washing	19	10
Chandlery	82	98
Surveyor	25	00
Stores	207	47
Meats, etc.	291	29
Lumber	265	47
Lighterage	7	00
Blacksmith	25	70
Water	44	70
Ship-liner	32	00
Discharging officer	24	00
Dockage—sea-wall	22	20
Advertising claims	2	50
Shipping crew	4	64
Clearance fees	2	70
California Sugar Refinery, dockage	132	48
" " discharging	753	88
Stevedores, loading	542	35
Pilotage, outward	145	56
Towage " and in port	327	50
Port agency	100	00
Commission on inward freight, 2½ per cent.	311	61
" " outward charter, 5 per cent.	792	03
Cables and postage	98	14
Cash to captain	150	00

N.B --Goods should never be allowed to leave the wharf without a clean receipt.

Pro Forma Charges on a steamer of 3,442 tons reg. from Iquique, with a cargo of nitrate:—

The United States—San Francisco (continued).

	Dols.	c.
Publishing crew notice	2	50
Tonnage tax	206	52
Customs charges, inwards	10	70
Consul's fees (Spanish)	12	00
Pilotage inwards	171	26
Merchants' exchange, reporting	5	00
Postage	1	30
Cables	12	48
Tow-boat assisting to Oakland Long Wharf	50	00
Stevedoring	3,239	05
Port agency fees	97	20
Charter commission, 5 per cent.	769	28
Coal	1,940	37
Rating chronometers, etc.	18	20
Boat hire	79	50
Pilotage, Oakland to Angel Island	50	00
Outward pilotage	142	26
Customs charges outwards	32	00
	6,839	62 = £1,407 6s. 6d.

SAN LUIS PASS.

San Luis Pass is in lat. $29^{\circ}7'$ N., long. $95^{\circ}5'$ W.

There is 7 to 8 ft. water on the bar. This port is only used by coasters.

A pilot will come off when signalled for.

SAN PEDRO.

San Pedro, in lat. $33^{\circ}44'$ N., long. $118^{\circ}14'$ W., is a sub-port of entry.

Population.—10,000.

Imports.—Lumber, cement, coal, coke, pig iron, etc.

Exports.—Crude oil, machinery, bricks, fruit, and general merchandise.

Accommodation.—There is a depth of water of from 5 to $8\frac{1}{2}$ fathoms in the outer harbour, and of 24 ft. at mean low water in the inner harbour; tides rise and fall 5 ft. The United States Government are constructing a breakwater 9,000 ft. long to protect the outer harbour, and wharves capable of accommodating any vessel are now in course of construction; a scheme is also under consideration to dredge the inner harbour to 30 ft. at low tide. There are $2\frac{1}{2}$ miles of wharfage at present in the inner harbour, but vessels drawing over 24 ft. of water lighter part of their cargo in the outer harbour. Cargoes may be discharged from vessels direct on to railroad cars. There are two transcontinental railway lines running here. There are 8 cranes to lift from 2 to 8 tons each and sheer legs to lift 20 tons.

Supplies of all kinds can be obtained at reasonable rates.

Pilotage.—Compulsory. 3 c. per ton and 4 dols. per foot draught of vessel.

Port Charges.—**Wharfage**:—900 to 1,200 tons, 12 dols. 75 c. per day; over 1,200 tons, 14 dols. 75 c. per day. **Entrance Fees**:—2 dols. per vessel. **Clearance Fees**:—2 dols. per vessel. **Towage**:—150 dols. per vessel in and out. **Boat Hire**:—50 c. **Ballast**:—1 dol. per ton, on board. **Labour**:—40 c. per hour. **Stevedore**:—Alongside wharf, 35 c. per ton.

The United States—San Pedro (*continued*).**Pro Forma Charges** on a sailing vessel drawing 24 ft. of water :—

	Dols.	c.
Discharging 7,007 tons cement at 35 c. per ton	2,452	45
Use of tug	150	00
24,000 gallons of water	120	00
Dockage, 16 days at 14 dols. 75 c. per day	236	00
Labour, handling coal	75	00
Postage account	1	50
Entrance and clearance	4	00

3,038 95 = £625 6s. 0d.

SANTA BARBARA.

Santa Barbara is in lat. 34°29' N., long. 119°44' W.

This port is only frequented by coasting vessels.

SANTA CRUZ (Cal.).

Santa Cruz is in lat. 37°0' N., long. 122°1' W.

Population.—14,000.**Exports.**—Leather and lime.**Accommodation.**—There is a depth of 18 ft. at high water, and of 12 ft. at low water. There are two wharves projecting about 600 ft. into the ocean, with berths on each side 120 ft. long, carrying 14 and 15 ft. of water at high tide.**Port Charges.**—**Wharfage** :—50 c. per ton. **Boat Hire** :—1 dol. per hour. **Ballast** :—75 c. per ton. **Labour** :—50 c. per hour.**SAPELO HARBOUR.**

Sapelo Harbour, in lat. 31°33' N., long. 81°26' W., is about 8 miles N. of Doboy.

Population.—2,000.**Exports.**—Timber, lumber, and pitch pine.**Accommodation.**—The harbour is well sheltered and is almost land-locked. There is a depth of 26 ft. mean at high water, and 18 ft. at low water, with a depth of 24½ ft. at lowest spring tides. Vessels of 24 ft. can always cross the bar, and the course from the sea is straight and clear, and the assistance of a pilot is, in most cases, unnecessary. The landing place is inside St. Catherine's Island. Sapelo is connected by telephone with Darien, where supplies and assistance can be secured at reasonable cost.**Pilotage.**—Compulsory. For rates, see **Savannah**. **Towage** :—25 c. per ton in and out, and attendance.**Port Charges.**—**Mooring** :—10 dols. per vessel. **Wharfage** :—10 c. per ton. **Entrance Fees** :—2 dols. **Clearance Fees** :—3 dols. **Tonnage Dues** :—See **United States**. **Boat Hire** :—Assisting steamers in and out, docking, etc., 125 dols. **Ballast** :—22 c. per ton. **Labour** :—2 dols. to 6 dols. per day.**Pro Forma Charges** on a steamer of 1,135 tons reg., with ballast in and timber out, drawing 17 ft. loaded :—

The United States—Sapelo Harbour (continued).

	Dols.	c.
Pilotage, inwards, 11 ft.	25	55
„ outwards, 17 ft.	57	34
Towage, in and out, and docked	125	00
Boat hire	20	00
Mooring ship	10	00
Water, drinking and for boilers	60	00
Telephone to Darien	10	00
Advertising crew	4	00
Entrance and clearance	5	00
	316	89 = £65 4s. 0d.

SATILLA RIVER.

Satilla River is situated near Brunswick (Georgia).

Exports.—Deals and boards.

Accommodation.—A vessel running down the coast should make the bar buoy, about 5 miles from the mainland. Vessels can anchor here and wait for a pilot if the wind is not blowing strong on to the shore. There is always 20 ft. of water on the bar. After crossing there is plenty of water and good shelter up to Jekyl Island, where there is an excellent anchorage. Ships usually anchor here, and wait for flood tide, in order to proceed to Satilla Mills, 25 miles from the bar buoy. Vessels drawing $17\frac{1}{2}$ ft. of water can come up to the mills, and load to that depth at the wharves. Vessels sail up to the Mills, but tow down to Sound at entrance and sail out. The bed of the river is soft mud. Rise of tide, 6 to 7 ft.

Vessels usually charter per 1,000 sup. ft., Mill survey, and the people are said to be very accommodating in the matter of stowage, so that shipmasters are enabled to load more here than at other "timber" ports. The deals are from 20 to 40 ft. long, and 1 to 4 in. thick.

Vessels should not charter to load *above* Bailey's Upper Mills.

Pilotage.—For rates, see **Brunswick**. Vessels are compelled to employ a pilot.

Port Charges.—**Towage**:—See **Brunswick**. **Tonnage Dues**:—See **United States**. **Stevedore**:—60 c. per 1,000 sup. ft., for deals and small stuff, taking the cargo from the wharf and stowing it.

SAVANNAH.

Savannah, in lat. $32^{\circ}4' N.$, long. $81^{\circ}11' W.$, is situated on the right bank of the river of the same name, about 18 miles from the mouth.

Population.—77,000.

Imports.—Salt, potash, wine, cement, pyrites, nitrates, coffee, etc.

Exports.—Cotton, naval stores, lumber, phosphate rock, etc.

Accommodation.—There is a depth of water on Tybee bar at mean high water of 33 ft., and at mean low water of $26\frac{1}{2}$ ft., these mean depths being the working figures for vessels. The authorities propose to dredge channel 500 ft. wide at the mean depths shown above, and to this end the entire width of 500 ft. has already been deepened to 22 ft. At spring tides vessels of 24 ft. draught may go up to the town in a single tide; it is advisable to make bar to city in one tide, and vice versa. The length of quayage

The United States—Savannah (*continued*).

and wharfage is 3 miles, and the depth alongside from 22 to 26 ft. at high tide. There are 8 ballast cranes capable of discharging from 10 to 12 tons per hour each. Good anchorage at Tybee outer roads for 100 vessels drawing up to 30 ft. A steam-tug is generally stationed at Tybee. There are two patent slips here that will take vessels of 1,200 tons and 450 tons respectively.

There are four railroads centring in Savannah, and two steamship lines ply regularly between Savannah and northern ports.

Harbour Regulations.—No vessel shall discharge or load any of her cargo in the river opposite the city, except at the wharves. No anchor is allowed in the river when the vessel is made fast to the wharf.

All masters of vessels, as soon as they come to anchor, shall rig in their jib-boom, spanker-boom, and main-boom; and all vessels shall brace their lower and top sail yards on starboard braces, take in the boomkins and davits, lay their sprit sail yards fore and aft, rig in their martingale, take in all boom-irons, and cock-bill their anchors. These regulations must be observed while lying at the wharf, or at anchor in any port of the river. The master of any vessel, or his representative, refusing to move his vessel when ordered to do so by the harbour master or deputy, the vessel shall be moved, if necessary, with tug or tugs, and proper crew employed, at expense of said vessel.

Master or consignee of any vessel wishing to move shall give the harbour master sufficient notice to enable him to give her a clean berth. The harbour master must be the judge of the time required.

No vessel shall be moved, after being placed at the wharf, without permission of the harbour master.

No vessel other than regular packets, arriving at the city, shall be docked without permission from the harbour master.

No vessel whatever shall be permitted to lie in the river before the city longer than twenty-four hours, inward or outward bound (powder vessels excepted). Vessels having powder on board must anchor as near the Fort wharf as possible, and the powder must be landed in 24 hours after anchoring.

All vessels, except regular packets, in ballast, waiting for freight, light, or occasionally taking in, discharging or retailing a cargo at any wharf, shall give the inside berth to a loaded vessel that wants to discharge forthwith; and every such vessel shall likewise give inside berth to a vessel that wants to take on her cargo immediately. Any vessel, except regular packets, taking in a cargo at any wharf, shall give the inside berth to a loaded vessel, if, at the time of application for such berth, there be no other vacant or equally suitable berth for such loaded vessel.

Every vessel hauling past or lying alongside and making fast to another vessel shall put out, in a proper manner, good and sufficient fenders and keep the same so placed as to prevent injury to the vessel she may be alongside of, and shall likewise so place her moorings as to prevent injury to said vessel, and if discharging or taking in a cargo athwart another vessel's deck, she must also keel her plank or staging so fixed as not to cause injury.

Masters of vessels shall not permit ballast, rubbish or dirt of any kind to be thrown into the river or harbour. All ballast or coal shall be thrown 10 ft. back, clear of the heads of the wharves; a heavy sack or tarpaulin must be put between the vessel and the wharf, extending under and 5 ft. on each side of the stage, to prevent any from falling into

The United States—Savannah (continued).

the river. The sweepings from the deck, or ashes from the caboose or rubbish of any kind, must be put upon the wharf and carted away.

No tar, pitch, or turpentine shall be boiled on any vessel's deck, or within 60 yards of any vessel or warehouse. Notice in all cases to be given to the harbour master.

No vessels lying at any of the wharves on the southern side of the river between Habersham's Mill and the eastern extremity of the city, is permitted to take on board any timber or lumber unless consent of the owners or lessees of the wharves has been obtained.

Not more than two vessels of 100 tons or more register shall be allowed to lay alongside at any wharf in the city so long as there shall be another wharf vacant, or with only one vessel thereat, except under special permit from the harbour master, approved by the mayor.

No vessel or boat lying alongside of any other vessel or wharf shall have a fire in the caboose, or any other place on or under deck of said vessel or boat, except in an iron caboose, and such caboose or other fireplace be well and safely covered and surrounded with a good and sufficient caboose house, hut or other covering or enclosure.

No shingle or sand ballast, or rubbish of any description, shall be landed without permission of the harbour master.

Any vessel will be admitted to a berth or be allowed to change from one berth to another on application to the harbour master.

The master of any vessel lying at anchor in any part of the river at night time, shall cause a good and sufficient light to be shown in some part of the rigging of such vessel, at least 20 ft. above her deck, which light shall be kept burning during all hours of the night.

Every vessel must always have on board a shipkeeper, or other person capable to take charge of her.

The crews of all vessels lying in the Savannah River from August 1 to November 1 in every year must sleep on shore south of River Street, under a penalty of 100 dols. or 30 days' imprisonment.

No steamer must, while passing along the line of the wharves of the city exceed in speed 4 miles an hour.

No steamer, while passing the line of quarantine wharves opposite the eastern end of Long Island, shall exceed a speed of 5 miles per hour.

Lighters with inflammable merchandise (naval stores excepted) must be covered with tarpaulins.

The use of matches in holds of vessels loading or unloading inflammable cargoes is forbidden.

The city quarantine station is south of and next to Fort Pulaski, in Savannah River. The national station is at Sapelo, to which station pilots will direct vessels that are infected. If that station be closed then they are directed to port quarantine stations, where vessels must anchor with or without sickness on board until released by the quarantine officer. Vessels from infected or suspected ports are detained, during the summer and fall months, six days after fumigation, which is administered after ballasting and cleansing.

Time Signals.—Chronometers can be checked. A black ball on the Custom House is dropped at noon mean time of the 75th meridian, equal to 5 h. 0 m. 0 s. Greenwich mean time and 23 h. 35 m. 39.3 s. local mean time.

The United States—Savannah (continued).

Pilotage.—Compulsory.

DRAUGHT.		Bar Pilotage to Cockspur.		From Cockspur to Savannah.		Total Amount.	
		Dols.	c.	Dols.	c.	Dols.	c.
6	feet and under	10	76	7	46	17	22
7	" " "	13	06	7	83	20	89
8	" " "	14	83	8	89	23	72
9	" " "	16	69	10	01	26	70
10	" " "	21	08	12	64	33	72
11	" " "	25	55	15	33	40	88
12	" " "	28	58	17	14	45	72
12½	" " "	30	30	18	18	48	48
13	" " "	31	84	19	11	50	95
13½	" " "	34	15	20	49	54	64
14	" " "	38	91	23	35	62	26
14½	" " "	42	74	25	64	68	38
15	" " "	45	08	27	04	72	12
15½	" " "	47	17	28	30	75	47
16	" " "	50	32	30	19	80	51
16½	" " "	54	13	32	48	86	61
17	" " "	57	34	34	41	91	75
17½	" " "	61	02	36	72	97	74
18	" " "	64	05	38	55	102	60
18½	" " "	67	17	40	34	107	51
19	" " "	71	72	43	04	114	76
19½	" " "	74	96	44	99	119	95
20	" " "	78	30	46	98	125	28
20½	" " "	82	81	49	39	132	50
21	" " "	87	50	52	50	140	00
21½	" " "	93	75	56	25	150	00
22	" " "	100	00	60	00	160	00
22½	" " "	106	25	63	75	170	00
23	" " "	114	06	68	44	182	50
23½	" " "	121	88	73	12	195	00
24	" " "	131	25	78	75	210	00
24½	" " "	—	—	—	—	223	75
25	" " "	—	—	—	—	237	50
25½	" " "	—	—	—	—	251	25
26	" " "	—	—	—	—	265	00
26½	" " "	—	—	—	—	278	75
27	" " "	—	—	—	—	292	00

Detention of pilots per day, 4 dols. 32 c.

MOVE.

DRAUGHT FEET.	Tybee to Sav'h or Sav'h to Tybee.	Venus Pt. to Sav'h or Sav'h to Venus Pt.	4 M. Pt. to Sav'h or Sav'h to 4 M. Pt.	5 Fathom to Sav'h Sav'h to 6 Fathom.
	Dols. c.	Dols. c.	Dols. c.	Dols. c.
6	8 00	8 00	6 00	4 00
7	8 00	8 00	6 00	4 00
8	8 00	8 00	6 00	4 00
9	10 00	10 00	8 00	6 00
10	10 00	10 00	8 00	6 00
11	11 00	11 00	10 00	8 00
12	11 00	11 00	10 00	8 00
13	12 00	11 00	10 00	8 00
14	14 00	14 00	12 00	10 00
15	17 00	15 00	13 00	10 00
16 and up	18 00	16 00	16 00	12 00

From Tybee to Venus Point same as from Venus Point to Savannah.

From Tybee to 4 Mile Point same as from Savannah to Venus Point.

From Venus Point to 4 Mile Point same as from 4 Mile Point to Savannah.

From Quarantine to Savannah same as from Tybee to Savannah.

And all vessels bound up or down the river and detained one tide, to alter the trim of the vessel, to pay the pilot a drop of 7 dols. and 50 c., but no detention for that day.

The United States—Savannah (continued).

Port Charges.—Towage :—Sailing vessels: Sea-buoy to city, loaded (direct), 12 c. per ton; sea-buoy to city, light, 10 c. per ton; city to sea, loaded, 15 c. per ton; drop to bight (extra), 3 c. per ton; drop at quarantine, to or from sea (extra), 3 c. per ton; drop at Tybee (bound up), 3 c. per ton. **Steamers:** Under 1,500 tons, 20 dols.; from 1,500 to 2,000 tons, 25 dols.; from 2,001 to 2,500 tons, 30 dols.; from 2,501 to 3,000 tons, 35 dols.; from 3,001 to 3,500 tons, 40 dols.; from 3,501 to 4,000 tons, 45 dols.; from 4,001 to 4,500 tons, 50 dols. **Harbour Dues :—**15 dols. **Boat Hire :—**5 dols. per service. **Tonnage Dues :—**See **United States.** **Wharfage :—**Vessels in ballast or with cargo not subject to duty, 3 dols. 37 c.; with cargo subject to duty, 5 dols. 70 c.; in ballast from port in the United States, 2 dols. Cargo pays wharfage in most cases. **Clearance Fees :—**Including Bill of Health, 2 dols. 70 c. **Discharging :—**Ballast, 50 c. per ton including wharfage; general cargo, 50 c. per ton. **Stowage :—**Timber, 1 dol. per 1,000; stevedores taking timber from booms, 2 dols. 25 c. per 1,000, if carried to Venus Point; lumber, 1 dol. per 1,000. No lighterage, but if carried to Venus Point the vessel pays lighterage. Cotton, 30 c. per bale. Naval stores, turpentine, 12 c. per bl.; resin, 6 c. per bl. **Lighterage :—**On cotton, 6 c. per bale; cylindrical bale, 4 c.; naval stores, resin, and turpentine, 5 c. per bl.; lumber, 30 c. per 1,000 ft.; cement, 5 c. per bl.; coal, 20 c. per ton. **Port-warden's Fees :—**Noting protest and survey on hatches and cargo, 11 dols. 50 c.; in case of damage, survey upon vessel, 25 dols.; in case of damage, survey upon cargo, 25 dols. **Trimming Coal :—**Shifting and trimming coal in bunker, 50 c. per ton. **Hospital Fees :—**Seamen are admitted to the Marine Hospital and tended for 75 c. per day, including board, medicine, and medical attendance.

Pro Forma Charges on a steamer loading cargo at Savannah :—

	Dols.	c.
Entrance	2	00
Harbour-master's fee	15	00
Clearance	2	70
Gratuities	35	00
Inspection of cotton	71	06
Outward pilotage	245	47
Stevedoring	2,161	53
Exchange on master's draft	5	94
Insurance	14	55
Advance charges, inland freight	895	85

3,449 10 = £709 13s. 9d.

SEATTLE.

Seattle is in lat. 47°40' N., long. 122°5' W. It is the largest city on Puget Sound.

Population.—243,600.

Imports.—Tea, coffee, salt, rice, cement, iron, and tin.

Exports.—Coal, lumber, wheat, flour, lime, cattle, sheep, hogs, furs, hides, butter, cheese, fish, fruit, and hay.

Accommodation.—The harbour is a large bay, 4 miles wide and 2 miles long, and is entirely land-locked. The extreme rise and fall of the tide is 14 ft. There is no bar, and the depth available in the port is 30 ft. at low water and 40 at high. Anchorage for vessels is on the south side of the bay, where there is from 15 to 20 fathoms of water; besides this there are seven substantial mooring buoys. The average depth of water

The United States—Seattle (*continued*).

at the wharves is from 15 to 35 ft. at low-tide. Vessels load and discharge cargo with their own gear. There are several steamship lines plying on the Pacific as coasters, and to China and Japan.

Three trans-continental railway centres are here, namely, the Canadian Pacific, Northern Pacific, and Great Northern, the latter having its terminal in this city.

Seattle is a sub-port, and all vessels must enter at Port Townsend.

The port equipment consists of a floating dock, 200 ft. long over all, 55 ft. wide at the entrance at high spring level, and with a lifting power of 2,500 tons; a patent slip 200 ft. cradle, 13 ft. forward, and 16 ft. aft on blocks, and with a lifting power of 1,000 tons. There are also 3 staithes for the shipment of coal from 100 to 150 tons per hour, together with a grain elevator at W. Seattle owned by the Northern Pacific Railway Co.; two grain elevators at E. Seattle owned by the Great Northern Railway Co.; these can load 600 tons per day.

Pilotage.—Not compulsory. If taken 100 to 150 dols. for double journey.

Port Charges.—Towage:—See **Port Townsend**. **Tonnage Dues:**—See **United States**. **Custom House Fees:**—Vessels in ballast, or with free goods, 2 dols. 15 c.; with dutiable goods, 3 dols. 50 c. **Clearance:**—2 dols. 50 c. **Harbour Dues:**—None except a fee of 10 dols. for making fast to City buoy. This fee gives a vessel the privilege of anchoring at the buoy for 5 days.

Stevedoring:—Discharging: Ballast, 35 c. per ton; cement, 40 c. per ton; pig iron, 40 c. per ton; general merchandise, 40 c. per ton; bricks and tiling, 67½ c. per ton; railroad iron, 55 c. per ton; scrap iron, 1 dol. per ton; structural iron, and iron beams, blooms, and shafting, 1 dol. 40 c. per ton; angle iron and iron goods, 90 c. per ton; coke, 80 c. per ton; coal, 40 c. per ton; glass, glassware, and crockery, 70 c. per ton; boiler plates, medium, 70 c. per ton; boiler plates, large, 1 dol. per ton.

Loading:—Wheat 30 c. per ton; flour, 30 c. per ton; barley, 35 c. per ton; salmon, 50 c. per ton; coal, trimming bunkers, 25 c. per ton; coal trimming, cargo, 20 c. per ton.

Ballast:—Gravel, f.o.b., 1 dol. 50 c. per ton 2,240 lb. Hard pine-wood, 2 dols. per cord. **Bunker Coal:**—3 dols. 75 c. per ton. **Fresh Water:**—Per gallon, ½ c. **Labour:**—Longshoremen's wages, 40 c. per hour.

Agency:—100 dols. **Tally Clerk:**—5 dols. per day. **Lining sides and bottom with 1 in. boards:** Vessels of 1,100 to 1,500 tons, 18 c. per ton; 1,600 to 1,900 tons, 17 c. per ton; 1,900 to 2,300 tons and upwards, 16 c. per ton. For scantling (3 in. × 4 in.) for dunnage, and fir shifting boards (2 in. × 12 in.), if required, 12 dols. per m. ft. Burlaps (including laying of same), 5½ c. to 6½ c. per yard of 40 in. wide.

Pro Forma Charges on a steamer of 1,000 tons in net reg., ballast from the United Kingdom, and loading 3,000 tons of wheat out:—

	Dols. c.
Tonnage dues at 6 c.	60 00
Entrance fee and tonnage tax receipt	2 70
Customs survey fee on entrance	3 00
Clearance fee and bill of health	2 70
Pilotage in and out	100 00
Buoy dues, five days	10 00

Carried forward 178 40

The United States—Seattle (continued).

Brought forward	Dols.	c.
Loading 3,000 tons cargo at 12½ c.	178	40
Port agency fee	375	00
Tally clerks, 2 for 3 days	100	00
Discharging 300 tons ballast at 35 c.	30	00
	105	00

788 40 = £162 4s. 5d.

SHIP ISLAND.

Ship Island, in lat. 30°15' N., long. 88°53' W., is 30 miles by the Mississippi Sound from Pascagoula.

Population.—11,000.

Imports.—Pyrites, kainit, mahogany, steel rails, and cement.

Exports.—Lumber and timber, resin, turpentine, round pine logs, cotton, and cotton-seed oil cake.

Accommodation.—The loading berth is to the northward of the island, where 26 ft. of water can be had at high tide and about 24 ft. at low. Draught of water at high tide on the bar, 28 ft. 6 in. A cotton warehouse is now in course of construction.

Pilotage.—Compulsory. For steamer or sailing vessel, minimum charge, 3 dols. 50 c. per foot in and out. **Towage** :—20 c. per reg. ton, from sea to sea (inwards and outwards); outwards only, 13 c.

Port Charges.—**Harbour-master's Fee** :—5 dols. for boarding. Each move in harbour, 5 dols. additional; 10 dols. if moored fore and aft in anchor basin. **Mooring** :—10 dols. per vessel. **Wharfage** :—Free, until the time allowance, based on the vessel's tonnage, has expired. **Boat Hire** :—2 dols. per day, or according to agreement, 25 to 30 dols. **Labour** :—25 to 50 c. per hour. **Ballast** :—Discharged on lighters, 30 c. per ton. Steam hoists may be obtained at the rate of 10 dols. per day for discharging ballast, etc. **Loading** :—Cost of loading is the same as at Gulfport, as the Gulfport stevedores do all the work. **Agency Fee** :—£5 10s. **Coal** :—Coal can be obtained by sailers in small quantities at 6 dols. 50 c. per ton. Supplied into bunkers if at the wharf, at 3 dols. 50 c. per ton; if in anchorage basin, 3 dols. 75 c. per ton. If delivered at night or on Sunday, 25 c. per ton extra. **Water** :—2 c. per gallon. **Provisions** :—Beef, 12½ c. per lb. Wood, 3 dols. per cord. Ship-chandlery of all kinds delivered on board from the Gulfport stores at reasonable rates.

SKAGWAY.

Skagway is in lat. 59°15' N., long. 135°15' W., about 2 miles from the head of Lynn Channel.

Accommodation.—The harbour is half a mile wide, with long mud flats extending out to deep water. It has 35 fathoms close to, deepening outward in a few cables to 150 fathoms. In the winter months, with off-shore winds, which blow with much force, ships drag out. There are three wharves, where vessels can moor in safety from all winds.

SOUTH BEND.

South Bend, in lat. 46°38' N., long. 123°46' W., is situated on the Willapa River, at the head of Willapa Harbour—formerly Shoalwater Bay.

Population.—2,500.

Exports.—Timber, fish, and oysters.

The United States—South Bend (continued).

Accommodation.—The river is the harbour, averaging 1,500 ft. in width and 30 to 35 ft. in depth for a distance of, say, 3 miles along the city's front, and beyond. There is plenty of water at its six docks for ships drawing 22 to 25 ft. Tide rises on an average 10 ft. The harbour is landlocked, and free from winds.

The South Bend Mills and Timber Co. dock is 600 ft. in length, and the other docks average 300 ft. in length. There is a fine gravelly beach just above the town where vessels can be safely beached for repairs. There is a good ship-smith's shop.

There is a tug stationed near the bar.

Pilotage.—For rates, see **Columbia River**. There is a pilot-boat belonging to this port that cruises all along the immediate vicinity, and strangers entering this port should take a pilot.

Port Charges.—Tonnage Dues:—See **United States**. **Survey:**—67 c. **Entrance Fees:**—2 dols. 50 c. **Clearance Fees:**—2 dols. 50 c. **Labour:**—About 2 dols. 50 c. per day. **Water:**—Plenty of fresh water is obtainable at nominal charges. **Towage:**—Inwards, free; outwards, 40 c. per 1,000 on timber.

TACOMA.

Tacoma, in lat. 47°15' N., long. 122°18' W., is on Commencement Bay in Puget Sound, about 170 miles from Cape Flattery, the entrance to the Straits of San Juan de Fuca.

Population.—130,000.

Imports.—Cement, structural iron, and general merchandise.

Exports.—Cotton, flour, cereals, and lumber.

Accommodation.—There is a depth of from 20 to 80 fathoms of water, and alongside the docks and wharves a minimum depth of 28 ft. Good anchorage is found in the bay on blue clay. Spring tides rise and fall 14 ft. There are large grain warehouses and elevators, with a capacity of 10,000,000 bushels, along the docks, with every convenience for loading vessels, at a rate of 6,000 tons of grain per day, in all weathers. The total length of wharfage is 4,250 ft. and a floor space of warehouses of about 450,000 sq. ft. Timber cargoes are received at the mill wharves without any lighterage. Railway connection with nearly all the wharves. There are engineering and machine shops for all kinds of repairs. There are five public and six private mooring buoys. Ballast can be discharged in the bay. There is a wooden floating dry dock at Dockton (Quartermaster Harbour), 7 miles away, 325 ft. long over all, 80 ft. wide at the entrance at the high water ordinary spring level, 23 ft. on the sill at high water ordinary springs, and with a lifting power of 5,000 tons.

Tacoma is the terminus of the Northern Pacific Railway Co. It is also the terminal point in Puget Sound for the Ocean Steamship Co., Ltd., and the China Mutual Steam Navigation Co., Ltd.; also a port of call for the Kosmos Line of Hamburg, the Hawaiian-American Line, and the Boston Tow-Boat and Steamship Companies.

This is the principal coaling port in Puget Sound. Coal bunkers, with a storage capacity of 20,000 tons and a loading capacity of 580 tons per hour, by means of electric conveyers, now give the port a loading capacity of 14,000 tons in 24 hours.

The United States—Tacoma (continued).

Quarantine station for the Puget Sound district is at Diamond Point. Incoming vessels may report at Port Townsend for pratique. Bill of health from U.S. Consular officer is very necessary from the last port of departure. Vessels may signal their arrival and departure from the U.S. Government Signal Station on Tatoosh Island as they pass by.

Pilotage:—Unnecessary, the Straits and Puget Sound being well marked by lights, buoys, fog-horns, and bells. Rates according to agreement.

Port Charges.—Entrance Fees:—2 dols. 70 c. **Clearance Fees:**—2 dols. 70 c. **Towage:**—As per agreement, according to tonnage. **Boat Hire:**—Usually 1 dol. **Consular Fees:**—Entrance, 1 dol. 25 c.; clearance, 1 dol. 25 c. **Tonnage Dues:**—6 c. per ton. **Ballast:**—1 dol. 40 c. per ton put on board. **Labour:**—40 to 50 c. per hour. **Brokerage:**—25 dols. **Stevedore:**—Lumber, 1 dol. 25 c. to 1 dol. 55 c. per 1,000 ft. B.M.; wheat and general cargo, from 30 c. to 75 c. per ton, according to the class of cargo.

Dry Dock Charges:—

For steamers, on gross tonnage:—

	First day.	Lay-days.
From 100 to 1000 tons	50 c. per ton	25 c. per ton.
" 1,001 " 2,000 "	40 "	20 "
" 2,001 " 3,000 "	30 "	20 "
" 3,001 tons and upwards, 20 c. per ton per day.		

For sailing vessels, on net tonnage:—

	First day.	Lay-days.
100 tons		50 dols. per day.
From 101 to 500 tons	50 c. per ton	25 c. per ton.
" 501 " 1,000 "	40 "	20 "
" 1,001 " 2,000 "	40 "	20 "
Over 2,001 tons	20 "	20 "

Cargoes are charged for at the same rate as tonnage. No charge for ballast.

Use of Mooring Buoys:—£2 for 15 days. **Water Rate:**— $\frac{1}{2}$ c. to $\frac{3}{4}$ c. per gallon. **Wharfage:**—50 c. per ton of cargo loaded or discharged.

Pro Forma Charges on a steamer of 2,000 tons reg., cargo of wheat out and ballast in, drawing 22 ft. loaded:—

	Dols.	c.
Harbour dues at 6 c. per reg. ton	120	00
Brokerage	25	00
Pilotage, in and out	250	00
Towage if tug used in docking	50	00
Boat hire	20	00
Stevedoring 30 c. per ton (4,000 tons)	1,200	00
Consular fees (entrance and clearance)	7	50

1,672 50 = £344 2s. 9d.

TAMPA.

Tampa, in lat. 27°57' N., long. 82°27' W., is situated at the mouth of the Hillsborough River and at the head of Hillsborough Bay.

Population.—42,000.

Imports.—General merchandise, cedar logs, and tropical fruits.

Exports.—Phosphate, lumber, and naval stores.

Accommodation.—There is 26 ft. on the bar, and 20 ft. in the dredged channel at mean low water. Tides rise 2 ft. 2 in. In the harbour at the wharves there is 20 ft. at mean low water, and the anchorage is good and safe in sand bottom. There is a marine railway about 1 mile up the

The United States—Tampa (continued).

river, suitable for vessels of 500 tons, the channel leading to the railway having a least depth of 8 ft. There is 10,560 ft. of wharfage, and 2 electric elevators for loading phosphate; capacity, 280 tons per hour. Also a steam elevator with a capacity of 150 tons per hour.

Pilotage.—Vessels drawing 8 ft. and under, 2 dols. 50 c. per foot; 15 ft. and under, 3 dols. per foot; over 15 ft., 3 dols. 50 c. per foot.

Port Charges.—Vessels from Caribbean ports, 3 c. per net reg. ton. From elsewhere, 6 c. per net reg. ton. **Stevedore** :—Loading phosphate, 25 c. per ton; miscellaneous cargo, 50 c. per ton; discharging, same price. **Ballast** :—50 c. per ton.

TEXAS CITY.

Texas City in lat. 29°28' N., long. 95°5' W., is on Galveston Bay, 7 miles from Bolwar Roads.

Population.—2,500.

Imports.—Cement, hemp, jute, copper, rubber, and mahogany.

Exports.—Cotton, lumber, grain, cotton-seed products, and petroleum.

Accommodation.—There is a depth of 23 ft. of water in the channel and harbour at mean low tide. The wharves are 1,000 ft. long, with 23 ft. alongside, and are accommodated with warehouses.

Pilotage.—Compulsory. 4 dols. 50 c. per foot draught.

Port Charges.—**Tonnage Dues** :—See **United States. Entrance and Clearance Fees** :—Tramp steamers, 25 dols. per vessel; regular liners, 12 dols. 50 c. per vessel. **Towage** :—About 75 dols. in and out. **Labour** :—About 40 c. per hour. **Coal** :—Average price, 4 dols. 25 c. per ton. **Fresh Water** :—10 dols. for any quantity required by vessel.

UMPQUA RIVER.

The mouth of this river is in lat. 43°30' N., long. 123°30' W.

Exports.—Lumber, grain, wool, and salmon.

Accommodation.—There is 16 to 20 ft. of water on the bar. A steam-tug can be had. Strangers should not attempt to cross without the aid of a pilot. Pilotage and towage as per agreement. No harbour dues.

GARDINER, about 9 miles up the river, is the port of delivery. Population, 500.

UNALASKA ISLAND.

Unalaska Island is in lat. 53°45' N., long. 167°0' W.

Population.—About 300.

Import.—Coal.

Export.—Raw furs.

Accommodation.—There is a depth of water in the channel to the wharf of from 6 to 10 fathoms, and alongside the wharf of 26 ft. at low water.

Port Charges.—**Wharfage** :—2 dols. per ton of merchandise landed. **Labour** :—2 dols. 50 c. per day of 10 hours. **Custom House Charges** : Nominal.

VELASCO.

Velasco, in lat. 29°1' N., long. 95°20' W., is situated on the east bank of the Brazos River.

The United States—Velasco (continued).

There is no shipping here now and the United States Customs Service have withdrawn their collector.

WILMINGTON (N.C.).

Wilmington, in lat. 34°12' N., long. 77°56' W., is situated on Cape Fear, about 30 miles from the bar.

Population.—21,530.

Imports.—Earthenware, salt, guano, phosphate, molasses, etc.

Exports.—Cotton, spirit of turpentine, resin, tar, crude turpentine, lumber, etc.

Accommodation.—The length of water front is 3 miles. The average depth available for vessels entering the port at high water, ordinary springs, is 21 ft., ordinary neaps, 20 ft. The depth at quayside at ordinary springs, high water, is 18 ft., and low water, 14½ ft. There is good anchorage. There is a patent slip with a cradle 175 ft. long, 42 ft. wide, and drawing 9 ft. forward and 18 ft. aft. The lifting power is 800 tons.

The health of the port is very good, but it is the custom for ship's crews to stay on shore at night during the months of July, August, and September. From May 1 to November 1, bills of health are required from vessels arriving from any port south of Wilmington; from vessels from northern ports they are not required at any time.

Pilotage.—

(Pilotage Compulsory.)
From Sea to Southport, or vice versa.

(River Pilotage not Compulsory for American Vessels.)
From Southport to Wilmington, or vice versa.

Feet and Under.

Rates.

Feet and Under.

Rates.

	Dols. c.
6	10 76
7	13 06
8	14 83
9	16 09
10	21 08
11	25 55
12	28 58
12½	30 30
13	31 84
13½	34 15
14	38 91
14½	42 74
15	45 08
15½	47 17
16	50 32
16½	54 13
17	57 34
17½	61 02
18	64 05
18½	67 17
19	71 72
19½	74 96
20	78 30
20½	82 81
21	87 50
21½	93 75
22	100 00
22½	106 25
23	114 06
23½	121 88
24	131 25
25	143 50

	Dols. c.
6	6 46
7	7 83
8	8 89
9	10 01
10	12 64
11	15 33
12	17 14
12½	18 18
13	19 11
13½	20 49
14	23 35
14½	25 64
15	27 04
15½	28 30
16	30 19
16½	32 48
17	34 41
17½	36 72
18	38 55
18½	40 34
19	43 04
19½	44 99
20	46 98
20½	49 39
21	52 50
21½	56 25
22	60 00
22½	63 75
23	68 44
23½	73 12
24	78 75
25	89 00

The United States—Wilmington (N.C.) (continued).

Port Charges.—Towage :—

<i>Square Rigged Vessels.</i>		c.
From sea to Wilmington and back to sea again, per gross ton		25
From Southport, or above, to Wilmington and to sea, per ton		22½
From Wilmington to sea, per ton		17½
<i>Schooners.</i>		
From sea to Wilmington and back to sea, per gross ton		19
From Southport to Wilmington and back to sea, per gross ton		16½
Vessels towing from sea to Wilmington, per gross ton		14
Above Southport or anywhere on the river, captains of tugs will make rates.		

HARBOUR TOWAGE RATES.

Vessels	under 300 tons gross	400 tons gross	500 tons gross	600 tons gross	700 tons gross	800 tons gross	900 tons gross	1,000 tons gross	1,100 tons gross	1,500 tons gross	2,000 tons gross	3,000 tons gross	Dols.
"	301 tons and under	400 tons gross	500	600	700	800	900	1,000	1,100	1,500	2,000	3,000	5
"	401	"	500	"	"	"	"	"	"	"	"	"	6
"	501	"	600	"	"	"	"	"	"	"	"	"	7
"	601	"	700	"	"	"	"	"	"	"	"	"	8
"	701	"	800	"	"	"	"	"	"	"	"	"	10
"	801	"	900	"	"	"	"	"	"	"	"	"	12
"	901	"	1,000	"	"	"	"	"	"	"	"	"	15
"	1,001	"	1,100	"	"	"	"	"	"	"	"	"	18
"	1,101	"	1,500	"	"	"	"	"	"	"	"	"	25
"	1,501	"	2,000	"	"	"	"	"	"	"	"	"	35
"	2,001	"	3,000	"	"	"	"	"	"	"	"	"	40
"				"	"	"	"	"	"	"	"	"	50

Transporting steamships in the harbour, 10 dols. extra when ships do not have their own steam.

To Navassa Guano Works, or to Power, Gibbs & Co.'s factory, and return to anchorage in the harbour :—

Vessels	under 300 tons gross	400 tons gross	500 tons gross	600 tons gross	700 tons gross	800 tons gross	900 tons gross	1,000 tons gross	1,100 tons gross	1,500 tons gross	2,000 tons gross	3,000 tons gross	Dols.
"	301 tons and under	400 tons gross	500	600	700	800	900	1,000	1,100	1,500	2,000	3,000	20
"	401	"	500	"	"	"	"	"	"	"	"	"	25
"	501	"	600	"	"	"	"	"	"	"	"	"	30
"	601	"	700	"	"	"	"	"	"	"	"	"	40
"	701	"	800	"	"	"	"	"	"	"	"	"	50
"	801	"	900	"	"	"	"	"	"	"	"	"	75
"				"	"	"	"	"	"	"	"	"	100

Fresh Water :—¾ c. a gallon pumped on board steamers or vessels.

Lighterage :—Seldom required. Rates vary. **Compressing Cotton :—**

70 c. per bale. **Wharfage :—**According to agreement. **Commission :—**

Lumber charter, 5 per c. ; cotton and naval stores, 2½ per cent ; advances,

2½ per cent. **Harbour-master's Fees :—**Sailing vessels, 3 dols. each ; steamers,

10 dols. each.

WILMINGTON (Del.).

Wilmington, in lat. 39°47' N., long. 75°32' W., is about 29 miles S.W. of Philadelphia, between Brandywine and Christiana Creeks, immediately above their junction, and 2 miles from the Delaware River.

Population.—85,000.

Imports.—Nitrate of soda, laths, saltpetre, hides, china, clay, etc.

Exports.—Powder, cars, leather, machinery, boilers, hard fibre, cotton goods, and boats.

Accommodation.—There is no bar at the entrance of the port. The harbour has an area of 175 acres, with 22 to 24 ft. of water at high springs, and 16 to 18 ft. at low springs. Rise and fall of tides from 6 to 6½ ft. The maximum draught that could be carried on June 30, 1908, at mean low water over the shoalest part of the river under improvement was 15 ft. to Harlan and Hollingsworth's shipyard, and 9 ft. thence to the pulp works.

The United States—Wilmington (Del.) (continued).

No public, but ample private facilities for loading and discharging. The dry dock is 350 ft. long over all, 90 ft. wide at the entrance at the high spring level, and 13½ ft. on the sill at high springs. There are two patent slips with cradles 195 and 200 ft. long; lifting powers 900 tons each. Repairs are executed, especially to machinery. The harbour has rail connection with all parts of the United States by means of three trunk lines—the Pennsylvania R.R., the Baltimore and Ohio R.R., and the Philadelphia and Reading R.R.; all these companies have excellent wharf accommodation at Wilmington.

Pilotage.—The assistance of a pilot is not required.

Port Charges.—**Tonnage Dues** :—3 c. to 6 c. per reg. ton, according to port of origin. **Certificate of Tonnage** :—20 c. **Survey** :—67 c. to 3 dols. **Entrance and Clearance** :—Coastwise, 2 dols.; foreign ships, 2 dols. 50 c. **Bill of Health** :—20 c. **Towage** :—In and out, about 3 c. per ton. **Wharfage** :—2 dols. 50 c. per day. **Ballast** :—1 dol. 50 c. per ton on board. **Discharging Ballast** :—15 c. per ton; coal, 20 c. per ton. No harbour-master's fee.

CENTRAL AMERICA.

HONDURAS (BRITISH).

The British Crown Colony of Honduras is on the Caribbean Sea, and lies between the Mexican State of Yucatan and the Republic of Guatemala. It has an area of 7,562 square miles, and a population of about 42,000. The coast is bordered by a fringe of small islands and coral reefs which render navigation difficult. The trade of the colony is of an annual value of about one million pounds sterling, this amount being almost equally divided between imports and exports. The chief exports are mahogany and logwood; the trees are felled in the forests of the interior and floated down to the coast, and thus the quantity to be exported in each year is largely dependent on the amount of water in the rivers available for floating them. Sugar and coffee are also exported, while cocoanuts, bananas, plantains, oranges, and pine-apples are extensively grown and exported to the United States.

The standard of currency is United States gold. The British sovereign and half-sovereign are legal tender, the exchange being fixed at 4 dols. 86 c. = £1 sterling. There is a paper currency of Government dollar notes, and a subsidiary silver coinage. Cent pieces (bronze) also circulate freely. The Bank of British Honduras has its head office at Belize, and undertakes all banking transactions.

BELIZE.

Belize, in lat. 17°27' N., long. 88°18' W., stands at the mouth of the river of the same name, and is the capital of British Honduras. Distance by sea from Liverpool, about 4,500 miles.

Population.—10,400.

Imports.—Bread-stuffs, salt provisions, cotton goods, hardware, tobacco, live-stock, etc.

Exports.—Mahogany, cedar, logwood, rosewood, fustic, sarsaparilla, indiarubber, hides, sponges, tortoiseshell, cocoanuts, sugar, rum, fruit, and specie.

Accommodation.—The depth available for vessels coming to the anchorage at high water is 20 to 25 ft.; at the anchorage 20 to 22 ft. There are four public wharves belonging to the Government. Vessels anchor at a distance of 1 to 2 miles from shore, and are loaded and discharged by lighters. The anchorage is good, being on mud and sand. Between the anchorage and the wharves there is a bar with only 2 to 3 ft. of water at high tide. There is a crane on one of the wharves to lift 6 or 7 tons.

Pilotage.—Compulsory, except for mail steamers and coasting vessels. **Inward or Outward:**—2 dols. 50 c. per foot. From the harbour to ballast ground, 6 dols.; shifting vessel, 2 dols.; to Sibun River, 6 dols.; other southern rivers, 1 dol. to 3 dols. per foot.

Honduras (British)—Belize (*continued*).

Port Charges.—Light Dues :—12½ c. per ton, with a maximum charge of 125 dols. **Lighterage :—**Logwood, 50 c. to 62½ c. per ton. Mahogany is towed off in rafts as required. **Stevedores :—**Sailing Vessels : Stowing logwood, 25 c. per ton ; stowing mahogany, lump sum. Steamers : —Stevedores, 3 dols. per day ; labourers, 1 dol. 75 c. to 2 dols. per day. **Hire** of winches, 8 to 16 dols. ; chains, 1 to 2 dols. ; grips, 1 dol. to 1 dol. 50 c. **Water :—**About 1 c. per gallon. **Provisions :—**Fresh beef and turtle, 12½ c. per lb. ; fish and vegetables can also be obtained at the market.

COSTA RICA.

The Republic of Costa Rica is the most southern of the Central American States. It has an estimated area of 18,400 square miles, and a population of 351,176.

Commerce.—The total annual trade is valued at about $3\frac{1}{2}$ million pounds sterling, the latest figures available showing imports valued at £1,511,627 and exports at £1,870,820. The principal articles of export are coffee, bananas, cocoa, and rubber, whilst the chief imports are textiles, coal, food-stuffs, railway material, hardware, haberdashery, and coffee sacks.

Mercantile Marine.—The merchant fleet of the Republic has a tonnage of 1,222 tons, made up of three steamers of 671 tons, and two sailing vessels of 551 tons.

Internal Communications.—There are 330 miles of rail line open for public traffic, consisting of 200 miles belonging to the Costa Rica Railway Co., and 130 miles the property of the Northern Railway Co. of Boston, U.S.A., who also manage the Costa Rica Railway Co.'s lines under a working agreement. This Company have extended various branch lines for the service of the banana industry, and carried out important improvements, principally the remodelling of the Limon freight yard, the relaying of the Atlantic section main line up to Siquirres and a large part of the Reventazon section with 60 lb. rails. There is a telegraph and a telephone service with 1,400 miles of line, and a wireless system between Limon and Bocas del Toro (Panama), 60 miles.

Currency, Weights and Measures.—The monetary unit is the gold colon or dollar valued at about 1s. $10\frac{1}{2}d.$; silver coins (fractions of the colon) are 50, 25, 10, and 5 c. pieces which are legal up to 10 colones. Copper is legal tender up to 1 colon. Foreign gold is granted free circulation, but foreign silver is not legal. Owing to the shortage of bills against the coffee crop 1907–8, which turned out to be about a half-crop, exchange rose to 115 per cent. premium, the highest rate since the introduction of the gold standard in 1900. The average rate during 1907 for sterling drafts at 90 days' sight, was 110 per cent. premium, i.e., £1=10 colones 50 c. There are three banks of issue, the Costa Rica, the Anglo Costa Rican, and the Commercial Bank of Costa Rica. These are by law compelled to keep a reserve in gold equal to half of their note circulation. The metric system of weights and measures was established by Congressional Decree in 1885, but the old weights and measures of Spain are in general use.

Tonnage Dues.—Steamers and sailing vessels of under 50 tons net reg. do not pay tonnage dues; those between 51 tons and 800 tons pay 50 colones for every 100 tons or fractional part of 100 tons, with a maximum cargo of 65 colones.

Costa Rica.

LIMON.

Limon, the chief port of Costa Rica, is situated close to Point Blanco, in lat. $10^{\circ}0'N.$, long. $83^{\circ}4'W.$ Vessels from all countries, under a friendly or neutral flag, are allowed to import or export all kinds of merchandise with the exception of those on which there exists a monopoly, and may warehouse or tranship them in entire liberty, under the Government regulations.

Population.—4,910.

Imports.—Silk, wool, linen and cotton goods, machinery, agricultural implements, tools, furniture, glassware and fancy articles of domestic use, flour, beer, wines, and liquors of all sorts.

Exports.—Coffee, bananas, hides, specie, cocoa, dye-woods, cedar, pearl shells, turtle and turtle shells, rubber, indigo, etc.

Accommodation.—The port is safe, easy of access, and secure from all winds. The anchorage is fit for ships of the largest size. There are two wharves capable of berthing two or three steamers each. The lowest depth of water is 17 ft.; average, 30 ft. The roadstead is open to heavy south-easterly swells during July and December. There is an iron pier that will take vessels of the largest size alongside, also a wooden pier. Four or five fruit steamers leave here every week. There is a railway from Limon to Alajuela, distant 117 miles, which passes through the capital, San José, 104 miles from Limon. There is also a railway, 40 miles long, which runs through the plantations of the United Fruit Co. The Government have been constructing a railway from San José to Punta Arenas on the Pacific side, and there is but a distance of some 16 miles from San Mateo to Esparta to complete to have an interoceanic route by rail. This stretch, however, offers many difficulties which engineering skill has not yet conquered.

The Port of Limon is now considered very healthy.

Pilotage.—Customary, but not compulsory. Inwards, 30 colones per reg. ton; outwards, 15 colones per reg. ton.

Port Charges.—Wharfage :—2 c. per gross ton. (Minimum 15 sols. gold, maximum 30 sols. gold.) **Clearance Fees** :—96 colones. **Consular fees** :—10s. **Labour** :—1 dol. gold per day. **Brokerage** :—25 sols. gold.

Pro Forma Charges on a steamer of 5,000 tons reg., with cargo of general merchandise in and ballast out, drawing 24 ft. loaded :—

	Col.	c.
Harbour dues, 30 sols. gold	30	00
Brokerage, 25 sols. gold	25	00
Use of springs and buoys	55	00
Pilotage, in and out	45	00
Bill of health (U.S.)	6	00
British bill of health	5	00
Checking cargo, etc.	40	00

206 00 = £19 6s. 3d.

PUNTA ARENAS.

Punta Arenas, in lat. $9^{\circ}58'N.$, long. $84^{\circ}46'W.$, is situated on a sand point projecting into the Gulf of Nicoya, towards the west, parallel with the shore mainland. It is almost surrounded with water. It is the only Costa Rican port open to foreign trade on the Pacific. Railway connection with San José and Limon will shortly be established.

Population.—4,640.

Costa Rica—Punta Arenas (*continued*).

Imports.—Cotton fabrics, boots and shoes, hardware, fence wire, canned goods, flour, beans, rice, sugar, provisions, wines, liqueurs, beers, cigars, furniture, etc.

Exports.—Coffee, cedar, mahogany, rosewood, dye-woods, hides, skins pearls, shells, and rubber.

Accommodation.—The estuary, or lagoon, inside, although navigable for vessels of small draught, is no longer used by vessels with cargo to discharge.

The harbour or roadstead has a general depth of 5 fathoms and upwards; level sandy bottom, and good anchorage for vessels of any size, and in all weathers, abreast the town, although the best place to anchor is towards the south-east or west of the pier, commencing about 300 metres from it. The large steamers of the Pacific Mail S.S. Co. anchor within a cable length of the pier.

All vessels discharge into lighters, of which there are ten, capable of carrying about 300 tons in all.

The iron pier is 425 ft. in length, and about 30 ft. wide, with an L from the west side; a lighthouse equipped with electric light is placed on the roof of the outer end, at about 40 ft. elevation from high water mark. This pier is roofed with iron. There are two donkey engines, and a double track rail on pier; the track leads to the Custom House at the head of the pier, and to the various storehouses in the town, freight cars propelled by hand being used.

The facilities for handling freight have been greatly enlarged by the erection of a large addition to the Custom House, the building of a new engine, and the purchase of additional cars and launches.

Pilotage.—Vessels sail or steam into the anchorage, no towage or pilotage required; but in case of loading up the Gulf they need a pilot, the charge for which is 17 dols.; if on the coast outside the charge is 34 dols. C.R. Nearly all the lumber and dye-wood is loaded as above.

Port Charges.—Harbour Dues.—Vessels under 50 tons free. From 50 tons to 800 tons, 50 colones and 1 colon for each addition 100 tons or fraction thereof, with a maximum of 65 colones. **Light dues** :—10 colones. Vessels arriving in ballast, or for supplies or repairs, do not pay dues or fees. Hospital patients from vessels admitted to hospital free of charge.

Ballast :—When brought here, must be dumped overboard across the Gulf, and when required can be had at the islands on the other side at 1 dol. per ton delivered alongside, or free of charge when the vessels use their own boats and men. **Labour** :—1 dol. per diem, with board, for all classes of work (labouring, or in loading or discharging vessels). **Water** :—Can be had ashore free of charge if ships furnish their own boats and men and casks. **Provisions** :—Neither plentiful nor cheap, with a few exceptions. Beef costs 15 c. C.R. per lb., and potatoes from 5 to 8 c., according to the state of the market. Vegetables are scarce, but plantains, yucas, and other tropical plants and fruits are plentiful and very cheap, and are an agreeable substitute.

Discharging :—It is customary for ships arriving here to deliver freight to lighters only, the other charges being all paid by the consignees of merchandise; also the ships' crews to do the necessary work, therefore saving the expense of stevedores. **Brokerage** :—Ship agency entering, 25 dols., and leaving, 25 dols.

GUATEMALA.

Guatemala is the most northerly of the Central American Republics. It has an area of 48,290 square miles, with a population (according to the census taken in 1903), of 1,842,834.

Commerce.—The trade of the Republic is of an annual value of about $3\frac{1}{2}$ million pounds sterling, the imports during 1907 being valued at £1,463,314, and the exports at £2,034,897. The Customs duties on imports are very high, and one-third of the amount levied has to be paid in United States gold. In connection with this it may be mentioned that packing, freight, insurance, commission, and jetty charges on maritime imports are taken by the Custom House as amounting to 25 per cent. on the first cost of the goods. The principal imports are barbed wire for fencing, raw cotton, silk fabrics, iron roofing, petroleum, leather, jute bags, hardware, coal, preserves, stearine in blocks, and lard; the chief exports being coffee, cow hides, timber, rubber, bananas, and sugar.

Internal Communications.—These are fairly good, the roads being well made and kept. The Guatemala Railway was inaugurated during the month of January, 1908. It is 195 miles long, and connects the port of Puerto Barrios, on the Atlantic, with the capital city, where it joins the Central Railway, which runs from Guatemala City to San José, on the Pacific, thus forming an interoceanic communication. This should prove of great advantage to European trade with the E. coast of America.

Currency, Weights and Measures.—The paper peso is the only money in circulation. The peso is legally divided into 100 centavos, but owing to the great depreciation in value experienced in recent years it is divided practically into reales representing $12\frac{1}{2}$ centavos. During 1908 the average premium on gold was 1,600 per cent., and at present (1909) the exchange is 80 pesos=£1 sterling; 16 pesos=1 dollar, United States gold, so that the peso, or Guatemala paper dollar, has a cash value of only 3d.

The Spanish weights and measures are used; the vara (consisting of 36 n.)=33 English inches; 110 Spanish pounds=1 cwt. (112 lbs.).

Charges on Shipping.—There are no Government dues on shipping of any kind.

CHAMPERICO.

Champerico is in lat. $14^{\circ}17' N.$, long. $91^{\circ}57' W.$

Exports.—Indiarubber, coffee, cochineal, sugar, lead, and tobacco.

Accommodation.—It is an open roadstead, vessels anchoring in about 6 fathoms of water. Shipmasters should watch carefully the shackles of the chain, as the pins are liable to work out. There is a steel pier 1,182 ft. long, 22 ft. wide, and 50 ft. high. Steamers and other vessels discharge and load cargo by means of launches of 25 tons capacity. Railway connection with Quezaltenango.

Guatemala.

GRACIOSA.

Graciosa, in lat. $15^{\circ}52'$ N. long., $88^{\circ}33'$ W., is situated at the extremity of a spit of land forming the northern boundary of the entrance to Hospital Bight. Climate unhealthy.

Exports.—Mahogany, dye and rosewoods, sarsaparilla, cochineal, cacao, coffee, and cattle and horses to Belize.

Accommodation.—The least depth of water on the bar is 13 ft., coral bottom. Rise and fall of tides about 1 ft., according to the wind. The anchorage inside, in about 22 ft., is well protected. Ballast is thrown overboard in 9 to 10 fathoms water, outside the bar.

Vessels wishing to proceed to Graciosa would have to call first at Puerto Barrios and take Custom House officer on board and return to same port.

ISTAPA.

Istapa, in lat. $14^{\circ}0'$ N., long. $90^{\circ}38'$ W., is no longer used as a port.

IZABAL.

Izabal, or Isabel, in lat. $15^{\circ}21'$ N., long. $89^{\circ}11'$ W., is situated on the south shore of the Gulf of Dulce.

This place has ceased to be used as a port.

LIVINGSTON.

Livingston, in lat. $15^{\circ}49'$ N., long. $88^{\circ}52'$ W., is situated at the mouth of Rio Dulce.

Population.—3,000.

Imports.—General merchandise, wine, spirits, woollens, cotton goods, coal-oil, beer, lumber, etc.

Exports.—Bananas, coffee, sarsaparilla, hides, rubber, and mahogany.

Accommodation.—Vessels anchor about 2 miles from the shore, outside the bar in from 5 to 6 fathoms of water, loading and discharging being done by means of lighters of about 50 tons carrying capacity. Tug-boats can be had.

A Custom House officer boards vessels on arrival to receive bill of health and manifest (in triplicate), and a guard representing the Custom House remains on board, and must be fed by the ship.

There is weekly communication with New Orleans and fortnightly with Mobile and Hamburg.

Port Charges.—There are no tonnage or harbour dues. **Clearance Fees:**—1 dol. gold. **Light Dues:**—2 dols. gold. **Water:**—Plentiful. **Labour:**—1 dol. gold per day. **Brokerage:**—25 dols. gold. **Ballast:**—Sand, stone, and gravel can be had for the labour. **Permit:**—Load and unload 1 dol. **Bills of Health:**—Guatemala, 5 dols.; American, 5 dols.; English, 2 dols. 50 c.; German, 2 dols. 25 c.; French, 2 dols. 25 c.

Guatemala.

OCOS.

Ocos, in lat. $14^{\circ}37'$ N., long. $92^{\circ}10'$ W., is 95 miles from San José, down the coast, and is a port of call.

Population.—1,200.

Imports.—General merchandise.

Export.—Coffee.

Accommodation.—This is an open roadstead, sandy bottom. Vessels anchor in about 6 fathoms of water, about $\frac{3}{4}$ of a mile from shore. Launches are hauled in by means of a cable.

Entrance and Clearance Fees:—25 dols. (U.S. gold).

PUERTO BARRIOS.

Puerto Barrios, in lat. $15^{\circ}43'$ N., long. $88^{\circ}34'$ W., is on the Bay of Amatique, about 15 miles from Livingston. Climate unhealthy.

Population.—1,300.

Exports.—Coffee, mahogany, and bananas.

Accommodation.—There is no bar at this port. The depth of water available for vessels entering at high water ordinary springs is 30 ft. Good holding ground; mud bottom. There is a pier belonging to the Government, 1,200 ft. in length, which can be reached at high water ordinary springs by vessels drawing 20 ft. Tides rise and fall about 2 ft. 6 in. This pier is in a very bad state and great care must be exercised in taking vessels alongside; bottom consists of soft slime for a depth of 10 or 12 ft. There are hand cranes on the pier, and a railway runs the whole length of it.

This port is the eastern terminus of the Guatemala Northern Railway, which is finished and in operation up to Rancho, a distance of about 130 miles.

Port Charges.—Wharfage:—10 dols. (U.S.) gold for 300 tons, and 5 dols. for every 200 tons over the first 300. For other charges, see **Livingston**.

ST. THOMAS.

St. Thomas, in lat. $15^{\circ}45'$ N., long. $88^{\circ}40'$ W., is situated on the Bay of Honduras.

Population.—2,200.

Accommodation.—The anchorage is in 30 ft. of water, and vessels of any size can enter at all times, and are perfectly secure against all winds. Close to the shore there is 18 ft. of water. This is not a port of entry, and all merchandise for this port must be unloaded at Puerto Barrios; only bananas may be loaded here. Excellent fresh water can be obtained.

There is a Belgian settlement at the bottom of the bight.

SAN JOSÉ DE GUATEMALA.

San José de Guatemala, in lat. $14^{\circ}0'$ N., long. $90^{\circ}53'$ W., is the principal port of Guatemala.

Population.—3,000.

Imports.—Lumber, flour, potatoes, tallow, canned goods, cotton goods, hardware, woollens, machinery, etc.

Guatemala—San José de Guatemala (*continued*).

Exports.—Coffee, hides, sugar, deer-skins, indiarubber, etc.

Accommodation.—It is an open roadstead, ships lying about $\frac{1}{2}$ mile from the shore. The bottom is of hard sand, not very good holding ground. During the months of June, July, August, September, and October this port is visited by violent wind storms, called "Chubascos," generally from the S.E., and accompanied by rain; these usually occur in the evening, and come on with slight warning. It is always advisable for ships to be prepared for these occurrences. There is an iron wharf extending 900 ft. from the shore, where all cargo is embarked or disembarked by means of lighters to and from the ships. The working capacity of the port is 400 to 500 tons per day. There are no lights. Vessels of any size can call here. Anchorage is in 10 to 14 fathoms of water. An artesian well supplies good water in abundance. Flour, meat, canned goods, and some vegetables may be obtained at this port, but it is necessary to make arrangements in advance. There is a native doctor. A good hospital and excellent doctors are to be had in Guatemala City. San José is connected with Guatemala City by the Central Railroad. A railway line was finished in January, 1908, between Guatemala City and Puerto Barrios on the Atlantic coast, so that there is now a line of rails across the Republic from San José on the Pacific to Puerto Barrios on the Atlantic. The port as a rule is fairly healthy.

Port Charges.—**Ballast** :—2 dols. 50 c. gold per ton, alongside.

Labour :—Afloat, 36 dols. per lighter per trip, overtime double. **Bill of**

Health :—Foreign ships to American ports, 5 dols. gold. American ships, free of charge. For supplementary bills of health all payments are made in paper. **Wharfage Dues** :—Steamers, 25 dols. currency. **Agency Fee** :—Steamers, 128 dols. currency. **Water** :—About 1 c. gold per gallon.

Pro Forma Charges on a barque with a cargo of 2,205 tons coal, and 5 cases steel bars, for San José de Guatemala :—

	Dols.	c.
Receipt and dispatch	207	00
Ligherage	8,040	00
Pier Co.'s charges on ballast	1,340	00
Towing, 75 dols. gold at 1,300 per cent.	1,050	00
Commission, 2 per cent.	32	16
Use of pier	25	00
Water, 5,000 gallons	400	00

11,094 16 = £138 13s. 8d.

HONDURAS.

The Republic of Honduras was established in January, 1839, immediately prior to the dissolution of the Central American Confederation. The administration is in the hands of a Council of Ministers presided over by the President, the legislative power being vested in a Congress of Deputies. The Republic comprises sixteen departments, with an area of 46,250 square miles, and a population according to the official census in 1905 of 500,136.

Commerce.—Almost the entire revenue of the Republic is derived from customs, and from the sale and working of monopolies, these including tobacco, spirit, and powder. Of the imports more than 50 per cent. are from the United States, the principal items drawn from Great Britain being cotton goods and yarn.

Mercantile Marine.—Three steamers and two sailing vessels, all of small tonnage, are registered under the flag of the Republic.

Internal Communications.—A railway, 57 miles in length runs from Puerto Cortez to La Pimienta, via San Pedro Sula, and is in course of construction to La Brea on the Pacific coast. A private line, 30 miles long, connects the banana plantations with the port of La Ceiba. Other lines are also projected, and a new road suitable for motor vehicles has been made between the capital town, Tegucigalpa, and the new port of San Lorenzo. Owing, however, to heavy rains and floods, and to the political disturbances having prevented the repairs being effected in time, the road has deteriorated very rapidly, and now stands in need of thorough overhauling with a considerable outlay of money to make it as moderately good as it was. As soon as these repairs are completed, the bridges strengthened, and some of the curves on the more mountainous parts reduced, the route will be quite practicable for large motor machines, the use of which will revolutionize the freight conditions between Tegucigalpa and its port Amapala.

Currency, Weights and Measures.—The monetary unit is the silver sole or dollar (40 c. United States=1 dol. or sole). The present exchange (Dec., 1908) is 12 soles 50 c.=£1 sterling. There are also fractional silver pieces and a 1 c. copper coin. A gold dollar worth about 4s. is also in circulation. The weights and measures are those of the metric system. The old weights and measures formerly in use, and even now favoured by the trading community, are the same as those in use in Mexico before the introduction of the metric system, i.e., 1 fanega=12·20 British gallons (dry); 1 cantara=3·54 British gallons (liquid); 1 Castilian libra=16 onzas=1·014 British pounds; 108 Cadiz varas=100 British yards.

AMAPALA.

Amapala, in lat. 13°13' N., long. 87°34' W., is on the island of Tigre, in the Gulf of Fonseca.

Population.—2,000.

Imports.—Mining machinery, cotton fabrics, hardware, flour, and liquors.

Exports.—Bar silver and gold, ore, coffee, hides, dye-wood, etc.

Honduras—Amapala (*continued*).

Accommodation.—There is a fine harbour, with sufficient water for the largest vessels, and good holding ground. Good water can be obtained, and also fresh meat, bread, and meal.

Port Charges.—**Clearance Fees** :—3 dols. (U.S. cy.). **Boat Hire** :—1 dol. 50 c. per trip. **Ballast** :—3 dols. (U.S. cy.) per ton. **Port Dues** :—3 dols. per vessel. **Brokerage** :—12 dols. **Stevedore** :—Discharging, 1 dol. 50 c. (U.S. cy.) per ton ; average, 200 tons per day. **Labour** :—75 c. (U.S. cy.) per day.

LA CEIBA.

Le Ceiba, situated on the Atlantic coast, is one of the chief ports of Honduras.

Population.—7,000.

Imports.—Provisions and dry goods from the United States.

Exports.—Bananas to New Orleans and Mobile.

Accommodation.—La Ceiba is an open roadstead, and affords no protection to vessels during northers, when they generally run to shelter in Utila.

Port Charges.—There are practically no charges except stamp duties used on the papers to enter and clear, about 1 dol. 50 c. gold. **Consular Fees** :—American bill of health, and consular invoice for banana steamers, 7 dols. 50 c. gold. **Labour** :—80 c. to 1 dol. gold per day for loading fruit steamers. **Brokerage** :—2 to 5 dols. gold for making entry. **Harbour Dues** :—Ships arriving with cargo, 10 c. gold per ton ; banana steamers, 3 c. (soles) per ton, and vessels in ballast free.

PUERTO CORTES.

Puerto Cortes, formerly named Puerto Caballos, is situated in lat. 15°15' N., long. 87°54' W.

Population.—2,500.

Imports.—Cotton, woollen, and silk goods, hardware, earthenware, lumber, provisions, flour, and mining machinery.

Exports.—Sarsaparilla, hides, deer-skins, indiarubber, indigo, mahogany, cedar, fustic, rosewood, bananas, oranges, tobacco, cigars, and gold bullion.

Accommodation.—The bay is fine and spacious, and safe for all winds excepting south-west. There is excellent anchorage in 6 to 9 fathoms on a bottom of sand and clay. Vessels usually anchor about 300 yards from the beach, in front of the Custom House at the west side of the bay. There is a small wooden pier, running from Comandancia. A wooden wharf, 120 ft. long, has been erected by the Railway Company, at which steamers can load and discharge in 35 ft. of water, but it is in bad condition and almost unsafe.

Port Charges.—**Wharfage Charges** :—Vessels free ; passengers, 1 dol. each ; goods, 20 c. per 100 lb. **Light Dues** :—6¼ c. per reg. ton. **Tonnage Dues** :—All vessels in ballast free ; sailing vessels with cargo, 25 c. per ton reg. Steamers pay tonnage dues, and are free only if they take bananas. **Labourage** :—From 2 to 3 dols. per day. **Stevedores** generally charge 1 dol. 50 c. per ton for loading vessels with timber. **Water** :

Honduras—Puerto Cortes (*continued*).

—A good supply is now available from the waterworks, completed in 1908, and pipes are laid on the wharf; the charge is very small. **Provisions** :—Beef, 25 c. per lb. Fresh vegetables are very scarce. **Custom House Charges** :—Manifest, 1 dol. 50 c.; permit to discharge cargo, 3 dols.; permit to load, 3 dols.; passport or clearance, 3 dols.; Honduras bill of health, 3 dols. **Brokerage** :—For entering and clearing steamers, 25 dols.; for sailing vessels, according to size; minimum, 10 dols.

Interpreter :—It is not the custom here to charge for interpreting between Spanish—the language of the country—and English. Other languages are subject to charge. There are no harbour or pilotage dues.

Pro Forma Charges on a steamer of 1,000 tons net reg., with 500 tons general merchandise in and cargo of 1,000 tons timber and bananas out :—

	Soles	c.
Customs charges	13	75
Consulate fees	7	75
Lighthouse dues, at 6½ c. per reg. ton	62	50
Commission, entering and clearing 25 dols. gold.	62	50
Stevedoring	2250	00
	2396	50 = £191 14s. 5d.

ROATAN ISLAND.

Roatan in lat. 16°23' N., long. 86°30' W., is the capital of the Bay Islands in the Caribbean Sea, and is the largest island in the group.

Population.—4,500.

Imports.—Dry goods, provisions, groceries, lumber, boots, shoes, etc.

Exports.—Plantains, bananas, pine-apples, cocoanuts, etc.

Accommodation.—There is a well-sheltered bay forming the harbour, with a depth varying from 3 to 25 fathoms. The tide rises about 1 ft. in the spring and summer, and has a 1½ ft. rise during the autumn and winter. There is a wharf at which small boats drawing 6 ft. can lay alongside, but large vessels load and discharge by means of lighters.

Pilotage.—Not compulsory. 1 dol. (U.S. currency) inwards, and the same out.

Port Charges.—**Entrance Fees** :—3 dols. **Clearance Fees** :—9 dols. 75 c. **Boat Hire** :—General merchandise, 10 c. per package; cocoanuts, 50 c. per 1,000. **Consular Fees** :—7 dols. 50 c. (U.S. currency). **Light Dues** :—32 c. (soles) per ton. **Labour** :—1 dol. 50 c. per day (U.S. currency). **Ballast** :—2 dols. 50 c. per ton (U.S. currency). **Brokerage** :—2 dols. 50 c. (U.S. currency). **Mooring** :—4 c. (soles) per reg. ton.

Municipal export duty on local produce : Bananas, 3 per cent. of cost per bunch, and 3 c. per bunch. Cocoanuts, 3 per cent. on the value, and 1 dol.

TRUXILLO.

Truxillo is in lat. 15°51' N., long. 86°0' W.

Population.—2,500.

Imports.—Dry goods, hardware, boots and shoes, wine, tin, rice, sugar, salt, beer, American bread-stuffs, rum, and flour.

Honduras—Truxillo (*continued*).

Exports.—Hides, sarsaparilla, rubber, deer-skins, mahogany, dye-woods, and cattle.

Accommodation.—This harbour is inside Cape Honduras, or Punta Castilla. It is safe in N.E. and S. winds, but dangerous when blowing from the N.W. or W. At such times small schooners generally get under weigh and seek shelter inside the point at a place called Rincon. There are no docks or quays. Vessels anchor in the bay in front of the fort and are loaded and discharged by lighters. Material and labour are very dear. Beef and vegetables are abundant and cheap. Good water can be obtained from the small rivers near the town. The casks may be rafted and rolled over a narrow neck of land, or filled in the boats by buckets. The price usually paid for 1,000 gals. delivered alongside is 1 dol. ; buckets and boats are loaned by the vessel to the labourers.

Port Charges.—Steamers loading fruits are free of tonnage and light dues, subject to a permit costing 1 dol. The following are the usual harbour and Custom House expenses for vessels without privilege :—

	Sols	c.
Custom House permit to discharge	3	00
" " manifest	2	25
" " permit to load	3	00
" " " to take water	1	00
" " " for shifting in harbour	0	15
" " clearance	3	00
" " " tonnage dues, per ton	0	25

Vessels not discharging do not pay tonnage dues.

Labour, per day, with food on board, 2 dols.

English or American bill of health, 10s. sterling.

Brokerage fees, entering and clearing, as per agreement.

Ballast :—1s. 6d. per ton put on board. **Beef** :—5d. per lb. **Wood** :—8s. per cord. **Commission** :—On procuring freight, 5 per cent.

Pro Forma Charges on a steamer of 2,200 tons, loading mahogany at Roman Bar, 15 miles E. of Truxillo :—

	Sols	c.
Permit to load	3	00
Clearance to Aguan	3	00
Permits for water	2	00
Clearance from Aguan	3	00
Clearance for foreign country	3	00
Bill of health	3	00
Hire of boat and 5 men	40	00
Agent's fees	100	00

157 00 = £12 11s. 2d.

ULLOA.

Ulloa, or Ulua River, is in lat. 15°0' N., long. 87°52' W., about 22 miles N.E. of Omoa.

Accommodation.—Vessels anchor outside in about 8 fathoms of water on good holding ground, but exposed to the sea breeze. In September the prevailing winds are from the S.W. Puerto Cortes is the port of entry and clearance.

NICARAGUA.

The Republic of Nicaragua is divided into thirteen departments and two comarcas. It has an area of 49,250 square miles and a population which is stated to exceed 600,000.

Commerce.—Great Britain, by the provisions of a treaty signed in 1905, is granted "most favoured nation" treatment. The imports, which mainly consist of cotton goods, iron and steel work, flour, etc., amount to about £1,000,000 sterling per annum. Of this amount the United States in 1907 contributed £384,622 and the United Kingdom £173,191. The coasting trade is restricted to Nicaraguan vessels, which in 1905 consisted of two steamers and twelve sailing ships having a combined tonnage of 8,027 tons.

Currency, Weights and Measures.—100 centavos=1 dol.=2s.; eleven silver pesos or about 30 currency pesos=5 pesos gold=£1 sterling. The only legal weights and measures in Nicaragua are those of the metric system, but in business the English pound and the American gallon with their fractions are used.

Internal Communications.—These consist of railways, all in private hands, and a few good roads. New roads are being constructed and steamers ply on the lakes.

General Regulations.—**Lighthouse Dues:**—On vessels from 2 to 50 tons, 2 dols., United States gold; from 51 to 500 tons, 5 dols., U.S. gold; above 500 tons, 10 dols., U.S. gold: these charges may, however, be paid in Nicaraguan paper currency at the current rate of exchange. **Entrance and Clearing:**—6 dols. paper. **Bill of Health:**—2 dols. paper. The Nicaraguan official bill of health is compulsory although a foreign bill of health may have been taken out. Bills of health: British, 8s.; American, 10s.

BLUEFIELDS.

Bluefields Bluff, at the entrance to the lagoon leading to Bluefields River, is in lat. 11°58' N., long. 83°51' W. Bluefields is 6 miles from the Bluff, at the mouth of the river, and is the capital of what was known as the Mosquito Reservation, but which is now the Department of Zelaya.

Population.—4,705.

Exports.—Bananas, gold, rubber, etc.

Accommodation.—There is 11 to 13 ft. of water on the bar, and any vessel that can cross can get up the river as far as Rama or Los dos Bocas, 50 miles above Bluefields. It is not safe for vessels drawing over 11½ ft. of water to cross the bar.

CAPE GRACIAS A DIOS.

Cape Gracias a Dios is in lat. 14°58' N., long. 83°10' W.

Population.—About 500.

Imports.—Flour, rice, beans, lard, cotton goods, and mining machinery.

Exports.—Gold, hides, and rubber.

Nicaragua—Cape Gracias a Dios (*continued*).

Accommodation.—Vessels anchor in 18 ft. of water about $\frac{3}{4}$ of a mile from shore, sheltered from N. and N.E., the prevailing winds. There is a canal available for small boats from the harbour to the river. There is no wharfage accommodation for ocean vessels.

Cargo is landed by means of lighters at consignee's expense.

Port Charges.—**Lighthouse Dues** :—10 c. silver per net ton. **Clearance Fees** :—4 soles. **Doctor** :—6 soles. **Commandante** :—6 soles. **Boat Hire** :—15 soles per trip. **Bill of Health** :—U.S. ports, 5 dols. (U.S. cy.). **Labour** :—1 sole per day including board. **Discharging Permit** :—2 soles. (Double rates on Sunday and holidays.) **Checker** :—5 dols. per day (U.S. cy.).

CORINTO.

Corinto, in lat. 12°30' N., long. 87°5' W., is situated about 1½ miles from Cardon Island.

Population.—800 to 900, but there is an increase during the summer, owing to the exportation of coffee and fustic, at which time it reaches 4,000.

Imports.—General merchandise.

Exports.—Coffee, dye-woods, and sugar.

Accommodation.—Corinto is the safest port on the Pacific side of Central America; vessels lie 100 to 200 yards from the shore. The depth of water in the harbour is from 6 to 8 fathoms; the entrance at Cardon Island is very narrow, about 120 yards in width, a pilot therefore is indispensable. The depth of water on the bar is 26 ft. There is now a Government wharf, alongside which all vessels must load and discharge. Vessels load about 250 tons per day. There is accommodation for one ship only at the time, and if several vessels are in port they must wait their turn, sometimes 6 to 8 days. No ship is allowed to discharge or load excepting at the wharf.

Pilotage.—3 soles per foot, in and out.

Port Charges.—Custom House duty, 10 c. per reg. ton; vessels with general cargo pay 20 c. per reg. ton; sealed papers and Custom House visit, 13 dols.; commandant's fees, 8 dols.; water duties, 50 c. **Shipbroker** :—Entrance, 3 dols.; clearance, 1½ dols.; commission on freight, 2½ per cent. **Stevedore** :—Loading, 3 dols. per day; discharging, 2 dols. **Ballast** :—3 dols. per ton. **Provisions** :—Reasonable prices. **Coal** :—From 500 to 2,000 tons in stock.

The port is only unhealthy when rains are too heavy and frequent.

GREYTOWN.

Greytown is in lat. 10°54' N., long. 83°46' W.

Population.—About 1,000.

Imports.—General merchandise.

Exports.—Coffee, rubber, hides, deer-skins, bananas, gold, etc.

Accommodation.—Greytown harbour is near the principal mouth of the River San Juan de Nicaragua. It is the beginning of the Nicaraguan transit, by the Nicaragua Steam Navigation Co., through the River San Juan and the Lake of Nicaragua, to the port of San Juan del Sur, on the Pacific. Vessels lie outside the harbour in the open roadstead, but have a fairly quick

Nicaragua—Greytown (*continued*).

dispatch, being discharged by steam lighters. The anchorage is good except when a heavy norther is blowing, in which case vessels have generally to put to sea; but there are probably not over 10 days in a year in which a vessel cannot lie off Greytown in safety, and discharge her cargo.

The bar is very shallow and uncertain, probably between 7 and 11½ ft., dredging and canal work having been abandoned for some years. Owing to the usually heavy sea on the bar it is very rarely that a ship's boat can safely cross, and it should never be attempted without a native boatman. The bar and mouth of the river swarm with sharks.

Vessels usually anchor from ½ to 1 mile off the entrance of the harbour; the bottom is sand. The lighthouse is at present (1908) under repairs, and the light is not to be depended upon.

Port Charges.—**Manifest**:—6 dols. (Nicaraguan cy.). **Clearance Fees**:—50 c. (N. cy.). **Lighthouse Dues**:—90 dols. (N. cy.). **Bill of Health**:—4 dols. 50 c. (N. cy.); stamped paper, 50 c. (N. cy.). **Port Governor's Fee**:—6 dols. (N. cy.). **Treasurer's Fee**:—3 dols. (N. cy.). **Bill of Health**:—U.S. or English, 10s. **Labour**:—Discharging, about 50 c. (U.S. gold) per day, including food. **Brokerage**:—Usually 2½ per cent. on inward cargo, and 5 per cent. on outward cargo, the broker entering and clearing the vessel, and collecting the freights payable in Greytown, if any. **Water**:—Whilst water can be obtained for the cost only of filling the barrels in the San Juan river, the actual cost is high, as, owing to the shallow bar, the casks have to be carried from and to the vessel by the local steam-tugs. The usual price per trip of a tug is about 30 dols. (U.S. gold). **Provisions**:—Fresh meat, 60 c. (N. cy.) per lb. Fruit, vegetables, and naval stores can be had, but other supplies are uncertain. **Ballast**:—Only sand ballast is to be obtained, and that at considerable expense.

SAN JUAN DEL SUR.

Port San Juan is in lat. 11°11' N., long. 85°48' W.

Population.—3,000.

Accommodation.—The harbour can be entered by the largest vessels, and is considered safe, except from September to May. There is a lighthouse on the top of a hill on the right of the entrance to the harbour, visible for about 3 miles. The anchorage is near three buoys marked "Cable."

Pilotage.—1½ dols. per foot.

Port Charges.—**Lighterage**:—1 dol. per ton. **Port Dues**:—Merchant vessels, 10 c. per ton. **Fresh Water**:—Scarce during the summer season, and bad in quality. **Provisions**:—Dear.

There is a duty of 5 per cent. net on the invoice value of all merchandise imported for consumption.

PANAMÁ.

The Republic of Panamá has an area of about 34,000 square miles with a population estimated at 400,000.

Commerce.—Outside the Canal Zone and the town of Bocas del Toro there are no commercial centres of any importance, whilst industrial or manufacturing pursuits are not followed.

Currency.—The gold balbao (=1 dol., United States currency) is the monetary unit. The silver dollar (peso=2s.) and fractional parts also circulates.

General Regulations.—The National Convention have established a lighthouse tax on all vessels entering the ports of the Republic of 5 c. per reg. ton on the first 100 tons, and $2\frac{1}{2}$ c. per ton on each ton above the first hundred. This regulation covers the Government lighthouses known as Toro and Manzanilla, at the Atlantic entrance to Colon. In addition to these, however, there is a lighthouse at Colon owned by the Panama Railroad Co., for which the following dues are charged : 7 dols. gold for each steamer regardless of tonnage ; sailing vessels—100 tons or under 1 dol. gold ; 100 to 200 tons, 3 dols. ; 201 to 300 tons, 5 dols. ; 301 tons or over, 7 dols., all payable in gold.

The ports of Christobel on the Atlantic and Ancon on the Pacific are within the Canal Zone and come under the jurisdiction of the United States Government. In these ports the light dues are the same as for the ports of the Republic.

There are no lighthouses on the Pacific coast of the Republic.

Ballast is charged for in Republican ports at the rate of 50 c. gold=2s. per ton. Clearance charges : Agents, £5 ; Government fees, 8s. There are no charges for ballast or clearance from Canal Zone ports.

Emigration and Immigration.—There being practically no emigration from this Republic, no necessity has arisen for regulations governing the same, and none at present exist. In the matter of immigration, there are no restrictions in the ports of the Republic (Panama and Colon), except that Chinese, Syrians, Turks, Gipsies, and other like undesirable persons are not allowed to land. In the American ports of Ancona and Christobel American law with regard to immigrants is applied, and any regulation made by the authorities of the Republic of Panama for their own ports is also applied in the case of the American ports.

CHAGRES.

Chagres is in lat. $9^{\circ}17'$ N., long. $79^{\circ}59'$ W. This place is no longer a port.

COLON.

Colon, in lat. $9^{\circ}19'$ N., long. $79^{\circ}52'$ W., is situated at the entrance to Limon, or Navy Bay, and is the terminus of the Panamá Railway and Canal.

Panamá—Colon (*continued*).

Population.—About 3,000.

Imports.—Coal and machinery for the Canal Co., and general cargo.

Exports.—Ivory, nuts, cocoanuts, timber, indiarubber, hides, etc.

Accommodation.—Vessels drawing 26 ft. can lie alongside the wharves, and are well protected except during the northern season, October until December. The rise and fall of tides varies from 18 in. to 2 ft., with a minimum depth of 25 ft. at any time. There are four wharves, with accommodation for seven steamers. Three of these wharves are the property of the Panamá Railroad Co., the other belongs to the R.M.S. Packet Co.

Pilotage.—Not compulsory. Steamers and sailing vessels, 10 dols., U.S. currency, per vessel. **Towage:**—10 dols., U.S. currency.

Port Charges.—**Entrance Fees:**—7 dols. 50 c. (approximately).

Government Stamps:—8 c. **Local Bill of Health:**—2 dols. 50 c. **Light**

Dues:—Government: 5 dols. for the first 100 tons, and $2\frac{1}{2}$ c. for each

succeeding ton; Panamá Railroad Co., 7 dols. **Government Tax:**—25

dols., U.S. currency, per ship. **Mooring:**—5 dols., U.S. currency, per vessel.

Wharfage:—35 dols., U.S. currency, per day. **Boat Hire:**—5 dols. No

shore boats ply in the harbour. **Consular Fees:**—U.S. Consul, 5 dols., or

2 dols. 50 c. for additional Bill of Health. **Labour:**—On wharf, etc., 11 c.,

U.S. currency, per hour; on board ship, $12\frac{1}{2}$ c., U.S. currency, per hour.

Ballast:—About 3 dols. 50 c., U.S. currency, per car load of 20 tons. **Broker-**

age:—50 dols., U.S. currency.

Pro Forma Charges on a steamer of 4,065 tons reg., with a

cargo of general merchandise in and ballast out, drawing 30 ft. loaded:—

	Dols.	c.
Government tax	25	00
Light dues	111	12
Mooring	5	00
Wharfage, 4 days	140	00
Entrance fees	7	50
Bill of health	2	50
Boat hire, 2 days	10	00
Ballast (400 tons)	70	09
Brokerage	50	00

421 12 = £86 12s. 11d.

PANAMÁ.

Panamá, in lat. $9^{\circ}0'$ N., long. $79^{\circ}34'$ W., is situated at the head of the gulf of the same name, and is the Pacific port of the railway which connects the Atlantic and Pacific oceans.

Population.—35,584.

Imports.—Coal, provisions, cereals, hardware, textile fabrics, and general merchandise.

Exports.—Timber, sugar, tobacco, rice, cotton, cocoa, balsam, coffee, indiarubber, gold, mother-of-pearl, skins, etc.

Accommodation.—The usual anchorage is $\frac{1}{2}$ a mile to the N. of the islands Naos and Perico, and $3\frac{1}{2}$ miles from the town. There vessels of any draught find good holding ground with soft mud bottom. In this anchorage there is a depth of 5 to 6 fathoms; ordinary springs rise $18\frac{3}{4}$ ft.; neaps, $10\frac{1}{2}$ ft.; extreme range, $23\frac{3}{4}$ ft. The greater portion of the cargo

Panamá—Panamá (*continued*).

is either landed or shipped by means of lighters or small steam launches, but occasionally a vessel proceeds to the wharf of La Boca, at the Pacific end of the canal, about $2\frac{1}{2}$ miles from Panamá City. There vessels are not lashed alongside the wharf, but have floats running out, so that they are in no way inconvenienced by the tides. On La Boca wharf, the cranes and winches are of a special kind that permit of working cargo at all stages of the tide. The following are the dimensions of the wharf: 985 ft. long and 54 ft. wide, with a depth of channel alongside of $45\frac{3}{4}$ ft. at high tide, and $26\frac{1}{4}$ ft. at low tide. It is possible for any vessel drawing less than 26 ft. to go alongside. There are six cranes to lift 2 tons, and one to lift from 20 to 24 tons. About 1 mile E. from La Boca, there is another anchorage for the use of vessels drawing not more than 12 ft. At Taboga Island there is a gridiron 300 ft. long.

Pilotage.—Obtainable, but unnecessary. **Towage:**—General tariff, £5 for 5 miles.

Port Charges.—Panamá is a free port, and vessels are not liable to any navigation dues. **Stevedores:**—80 c. per ton, loading or discharging. **Labour:**—1 dol. 85 c. per day with food. **Ballast:**—Stone, 3 dols. 50 c. f.o.b.; sand, 1 dol. per ton. **Water:**—5 dols. per ton. **Entrance:**—4 dols. 50 c. **Clearance:**—5 dols. **Manifest:**—4 dols. **Consular Fees:**—4 dols. All these charges are in Republican silver.

PORTO BELLO.

Porto Bello is in lat. $9^{\circ}29' N.$, long. $79^{\circ}37' W.$ All trade with the Gulf of San Blas is confined to Porto Bello.

Population.—About 500.

Accommodation.—There is good anchorage for vessels in from 4 to 12 fathoms, and steamers occasionally run here from Colon to ride out a norther. Vessels bound here from Cuba in the months of August to September should keep well to the W. of their intended port, as the current runs to the E.N.E. at the rate of at least $1\frac{1}{2}$ miles per hour, and when near the land, about E.S.E., at the same rate. The prevailing winds during the above months vary between the W. and S.W., mostly light airs. Plenty of fresh water can be obtained here.

SALVADOR.

Salvador became an independent Republic upon the dissolution of the Central American Federation in 1839. The executive power is in the hands of the President and a Ministry of four members, a Congress of 70 deputies constituting the legislative authority. The Republic is divided into fourteen departments, and has an area of 7,225 square miles, and a population estimated at nearly 1,250,000.

Commerce.—The Customs duties are extremely high, these forming the main source of revenue. The import trade is principally with the United States, Great Britain, and Europe, the chief articles being hardware, cotton and silk goods, corn, flour, and drugs.

Currency, Weights and Measures.—The gold standard was adopted by a law passed in 1897, when the importation of debased silver coin was prohibited. Accounts are kept in dollars of 100 centavos, and although this has a nominal value of 4s., the real value is only about 1s. 7d. The metrical is the legal system of weights and measures, but the old Spanish quintal=100 libras=101.44 English pounds is still used by many commercial firms.

Internal Communications.—Good roads are general throughout the Republic, whilst a railway connects the port of Acajutla with Santa Anna and La Ceiba, another branch running to the capital San Salvador. The construction of a tramway to connect La Libertad and Nueva San Salvador is under consideration.

ACAJUTLA.

Acajutla, in lat. 13°39' N., long. 89°54' W., is the port of Sonsonate.

Population.—About 1,500.

Imports.—Cotton and silk goods, yarn, hardware, flour, drugs, etc.

Exports.—Coffee, balsam, hides, deer-skins, sugar, and indigo.

Accommodation.—Acajutla is an open bay about 62 miles S.E. of San José; it is sheltered from the S.E. by the Remedios Reef, a dangerous and extensive shoal, extending from a point of the same name. The salt water here is very injurious to cables and copper. Ships anchor in 9 to 11 fathoms. Landing is difficult, and ought to be effected in a good whale-boat. Merchant vessels load and discharge their cargoes by means of launches, or large craft in the shape of whale-boats. A substantially built pier, fitted with cranes, facilitates the landing, although at times the surf renders it hazardous. By giving two days' notice, fresh provisions may be obtained in large quantities from Sonsonate. The old roadstead known as Puerto Viego (about $\frac{1}{2}$ a mile W.) is the one now mostly used by shipping; there is an iron pier about 234 metres in length, and the railway to the interior starts from here. It is claimed that better bottom anchorage is found in this place, with the same depth. Ballast is thrown overboard a little outside the anchorage.

Port Charges.—The only port charge is 15 c. per ton, payable in

Salvador—Acajutla (*continued*).

one port only. **Labour** :—2 dols. per day. **Custom House** :—Business charges, 16 dols. **Sailing License and Muster Roll** :—4 dols. The total expenses of a vessel of 304 tons reg., loading three-fourths of her cargo at Acajutla and the remainder at La Libertad, amounted to £16.

LA LIBERTAD.

La Libertad is in lat. 13°27' N., long. 89°19' W.

Population.—2,500.

Imports.—General merchandise.

Export.—Coffee.

Accommodation.—This is an open roadstead in which vessels anchor in 7 fathoms opposite the pier, and are loaded and discharged by lighters. The holding ground is good. The pier is built of iron, and is 919 ft. long and 50 ft. wide at the sea end. It has one donkey-engine to lift 10 tons, and one crane to lift 15 tons. From the wharf to the anchorage there is a depth of from 5 to 10½ fathoms. The difference between high and low water is 1 fathom. There is a tugboat, which greatly facilitates loading and discharging.

Port Charges.—¹**Entrance Fees** :—12½ c. per reg. ton. **Boat Hire** :—3 dols. silver. ¹**Light Dues** :—10 dols. silver. **Labour** :—As per agreement. **Brokerage** :—30 dols. silver. ¹**Sanitary Visit and Bill of Health** :—5 dols. silver. ¹**Roll** :—3 dols. silver.

Fresh Water :—Plentiful, and can be obtained free of charge. **Provisions** :—Beef, 10 c. gold, per lb.

Pro Forma Charges on a steamer of 1,000 tons reg :—

	Dols.	c.
Harbour dues at 12½ c. per reg. ton	125	00
Brokerage	30	00
Boat hire	3	00
Bill of health	5	00
Light dues	10	00
Roll	3	00
		176 00 = £35 4s. 0d.

At Nominal Charges.

¹ Steamship companies having contract with the Government do not pay any of these charges.

LA UNION.

La Union, in lat. 13°15' N., long. 87°55' W., is on the N.E. portion of the Gulf of Fonseca.

Population.—6,000.

Imports.—Flour, cotton, linen, silk, groceries, earthenware, beer, liquors, machinery, and iron.

Exports.—Coffee, rubber, hides, sugar, and gold bars.

Accommodation.—This port is completely land-locked, and has a depth of 4 to 5 fathoms. There is 21 ft. at low water within 5 cable-lengths of the pier; springs rise 10 ft., neaps 8 ft. There is a depth of 12 ft. at high tide alongside the small stone jetty; at low tide it is dry. It is not safe to anchor too near the town, as the holding ground is not good. Communication with the shore is sometimes cut off for days.

Salvador—La Union (*continued*).

Pilotage.—Not compulsory. 30 soles per reg. ton.

Port Charges.—**Ballast** :—4 soles per ton. **Labour** :—1 sole 50 c. per day. **Landing and Shipping Cargo** :—5 soles per ton of 2,000 lb. or 40 cub. ft. **Entrance Fees** :—Sailing vessels, 12 c. silver per ton. **Clearance Fees** :—Sailing vessels, 3 soles. **Light Dues** :—Sailing vessels, 12 soles. Steamship companies, having special contract with the Government, do not pay any entrance fees, clearance fees, or light dues.

THE WEST INDIES. (BRITISH.) THE BAHAMAS.

The Bahama Islands, which form the most northerly of the West Indian group of British possessions, comprise about 3,000 low coral islets, rocks, banks, etc., of which, however, only twenty are inhabited, with a total area of 5,450 square miles, and a population estimated at a little under 60,000. The total trade of the colony amounts to over £600,000 per annum, the latest returns showing imports valued at £372,937, and exports at £238,232. These exports consist mainly of fruit, sponges, pearls, and coral, whilst the imports comprise food-stuffs, textiles, and general merchandise. An effort is being made to increase the exports of sisal hemp fibre, the cultivation of which is rapidly spreading throughout the colony. Banking facilities are afforded by the Bank of Nassau, which is also a bank of issue, the notes bearing a face value of 20s. and 4s. respectively. British silver and bronze coins, together with the American dollar and its subsidiary denominations, circulate freely. There is a well-organized postal service.

ELEUTHERA ISLAND.

Eleuthera Island, in lat. $25^{\circ}25'$ N., long. $76^{\circ}30'$ W., is on the N.E. edge of the Bahama Bank.

Exports.—Pine-apples, in bulk and preserved, and sisal.

Accommodation.—Governor's Harbour is the port of entry, and vessels also load at the Cove and Tarpum Bay, with about 4 fathoms of water in each. The greatest draught of water considered safe is 15 ft. The pine-apples are brought off in boats to the anchorage, and a vessel of 130 tons reg. can be loaded in one day. The shipping season is during May and June. There is communication with Nassau weekly, and telegraphic communication between Nassau and Jupiter Inlet (Florida). There is a marine railway at Nassau, where repairs can be effected.

Pilotage.—Pilots are generally taken on board at Egg Island and Six Shilling Channel.

Port Charges.—**Tonnage Dues** :—1s. per ton, payable once a year. Vessels arriving in ballast or for fruit pay no tonnage dues. **Provisions** :—Provisions can be had at fair rates, but the supply of fresh meat is limited. **Water** :—A limited amount may be obtained from rain-water tanks at reasonable rates.

GREAT INAGUA.

Great Inagua is in lat. $21^{\circ}4'$ N., long. $73^{\circ}30'$ W.

Population.—Estimated at 1,800.

West Indies (British)—Great Inagua (*continued*).

Imports.—Provisions, dry goods, furniture, kerosene, etc.

Export.—Sisal.

Accommodation.—The harbour light is placed on a steel tower, 40 ft. above the level of the sea. It is a white light, and visible for 8 miles. Vessels coming into the harbour at night bring the light to bear E. and steer for it. When the Inagua light bears S.S.E. they will be in 6 fathoms of water, with no reefs or rocks. The rise and fall of the tide is about 30 in., and a few inches more at spring tides. There are no wharves or railways, but only a landing pier for passengers.

Pilotage.—Not compulsory. Rates as follows:—

On vessels of	30 and not over	50 tons burden	£	s.	d.
.. over	50	75	0	8	0
..	75	100	0	10	0
..	100	150	0	15	0
..	150	200	1	0	0
..	200	250	1	5	0
..	250	300	1	10	0

And for every 20 tons over 300 tons, 1s. per ton. Maximum charge, £2. Double the above rates are charged for piloting vessels into Alboys Hole (Alfred Sound) and Man-of-War Bay anchorages.

Port Charges.—**Harbour Dues** :—Sailing vessels pay 1s. per ton, payable once a year. **Boat Hire** :—Bum boat, 3s. per trip. **Ballast** :—About 12s. per ton. **Labour** :—From 3s. to 4s. per day. **Brokerage** :—5 per cent. on disbursements.

NASSAU (New Providence I.)

Nassau, in lat. 25°3' N., long. 77°31' W., is the principal seaport on the island of New Providence.

Population.—About 7,000.

Imports.—Provisions, hardware, clothing, dry goods, and ship chandlery.

Exports.—Sponges, sisal, cotton, fruits, salt, logwood, lignum-vitæ, ebony, satinwood, tortoiseshell, etc.

Accommodation.—Vessels of 15 ft. draught can enter at low water springs, although the depth is 17 ft., but the bar is rocky, and is only safe for vessels up to that draught. There is 20 ft. on the bar at ordinary high springs. There is 800 ft. of quayage, with 13½ ft. alongside at high water and 10½ ft. at low. Vessels are loaded and discharged alongside piers or by lighters. The depths alongside are gradually being decreased by the washing in of sand. When it is dangerous to cross the bar, a red light is exhibited at Hog Island lighthouse. Ordinary repairs to hull can be effected, and there is a patent slip on Hog Island capable of lifting small vessels of 150 or 200 tons. Machinery cannot be repaired.

Pilotage.—Compulsory.

For Nassau Harbour, Salt Cay, and Hanover Sound anchorages:—

	£	s.	d.
Eight feet and under	1	1	0
Nine feet	1	5	0
Ten feet	1	9	0
Eleven feet	1	13	6
Twelve feet	2	2	0

West Indies (British)—Nassau (New Providence I.) (continued)

	£	s.	d.
Twelve feet and a half	2	5	0
Thirteen feet.	2	10	0
Thirteen feet and a half	2	13	0
Fourteen feet.	2	15	0
Fourteen feet and a half	2	17	0
Fifteen feet	3	2	0
Fifteen feet and a half	3	10	0
Sixteen feet	4	0	0
Sixteen feet and a half	4	10	0
Seventeen feet	5	0	0
Seventeen feet and a half	5	5	0
Eighteen feet.	5	10	0

And 5s. in addition for every half foot above 18 ft., with an additional fee of £5 on the pilotage of all steamers. For Cochrane's anchorage and South-West Bay anchorage, one-fourth in addition to the above rates.

Port Charges.—Tonnage Dues (payable once a year):—1s. per ton reg. inwards and the same outwards. In ballast, 1d. per ton reg. Vessels loaded with salt or fruit and steamers are exempt. **Wharfage**:—Per day:—

	£	s.	d.
For every vessel over 100 tons and not exceeding 150 tons	0	18	0
„ „ 150 „ „ 200 „	1	0	0
„ „ 200 „ „ 250 „	1	2	6
„ „ 250 „ „ 300 „	1	5	0

On every additional ton, 1d. per ton.

The following fees are charged on all vessels discharging and loading cargoes at the wharf at Harbour Island, viz.:—

	£	s.	d.
For every vessel over 40 tons and not exceeding 50 tons	0	12	6
„ „ 50 „ „ 60 „	0	15	0
„ „ 60 „ „ 70 „	0	17	6
„ „ 70 „ „ 80 „	1	0	0
„ „ 80 „ „ 90 „	1	2	6
„ „ 90 „ „ 100 „	1	5	0

Labour:—2s. 6d. to 3s. per day. Discharging powder, 1s. per sack. Head stevedore, 4s. per day. **Coal**:—About 30s. per ton. **Water**:—Fresh water alongside, 1d. per gallon. **Provisions**:—Beef, 1s. per lb. Bread, moderate in price.

Pro Forma Charges on a vessel of 151 tons reg., cargo in and out, drawing 11½ ft. the first call in the year:—

	£	s.	d.
Tonnage dues	15	2	0
Noting protest	0	6	3
Wharfage	2	0	0
Pilotage inwards	2	2	0
„ outwards	2	2	0
	£21	12	3

BARBADOS.

Barbados is the most easterly of the West Indian islands, having an area of 166 square miles and a population of 194,520. The staple products of the island are sugar and cotton, together with a small quantity of fish and fish oil, whilst general merchandise finds a ready sale at the various ports. Bridgetown, the capital, stands on the shore of an open roadstead named

West Indies (British)—Barbados (continued).

Carlisle Bay in the S.W., and a railway runs thence round the south and east of the island. Government accounts are kept in pounds, shillings, and pence British sterling, but in commercial transactions the dollar of 100 cents.=4s. 1d., is mostly used. The weights and measures are the same as those in use in the United Kingdom.

The United States Marine Hospital Department send every year to Barbados one of their officers, for the sole purpose of fumigating steamers that may be bound from an infected port to a U.S. port south of the southern border of Maryland, U.S.A. He is stationed here from the middle of April until the end of October. Fumigation at Barbados does not do away with fumigation at port of destination, but a steamer fumigated at Barbados is admitted to pratique on being fumigated at port of destination, provided she has arrived there within 12 days of leaving Barbados. Vessels not having been fumigated at Barbados would have to be fumigated on arrival, lie in quarantine for 5 days probably, and then be fumigated again. The services of the fumigation officer are free, so that steamers only have to pay for the cost of materials, which is about £4 to £5, according to size of steamer.

BRIDGETOWN.

Bridgetown, in lat. 13°8' N., long. 59°34' W., is the chief town of Barbados (the most eastern of the West Indies), and is situated in Carlisle Bay.

Population.—30,000.

Exports.—Sugar and molasses.

Accommodation.—Vessels loading sugar do so entirely at Bridgetown, lying at anchor in Carlisle Bay, where the sugar is taken alongside in lighters of 10 to 30 tons each. Vessels of 14½ ft. draught, loading molasses, usually come alongside the wharf inside the carenage. The approaches to the island are well lighted, and the leeward part of the bay, near Pelican Island, affords excellent anchorage in shoal water, where vessels in ballast are usually directed to anchor in 6 to 15 fathoms. The upper portion of the bay is reserved for vessels loading and discharging cargo and for steamers. The depth of water in the middle of the bay is from 20 to 30 fathoms. The depth on the bar at the entrance to the "carenage" at ordinary springs is 15 ft. at high water and 13 at low. There is 3,495 ft. of quayage, with 16 ft. alongside at high water. There is a Government crane to lift 13 tons, with 15 ft. alongside at low water; a Government movable crane to lift 2½ tons, and twenty other cranes to lift up to 2 tons each. Vessels unable to cross the bar can be coaled by lighters at the rate of 50 to 60 tons per hour. There is a screw lifting dock 240 ft. long over all, 40 ft. wide at the entrance at the high spring level, and 12 ft. on the sill at high springs. The lifting power is 1,200 tons. Extensive repairs can be undertaken. Large quantity of Welsh and American steam coal kept in stock.

Pilotage.—Not compulsory. Into or from Carlisle Bay:—

	Dols.	c.
For vessels not exceeding 250 tons	2	00
.. exceeding 250 tons but not exceeding 400 tons	3	00
.. .. 400 ..	4	00
.. .. 600 ..	5	00
.. .. 800 ..	6	00
.. .. 1,000 ..	7	00

West Indies (British)—Bridgetown (*continued*).

Steamers same as above rates. Ships of war, £2 each. Vessels anchoring between 7 p.m. and 6 a.m. pay 50 per cent. additional on above rates.

Port Charges.—Vessels calling for orders, seeking freight, etc., 3 dols. **Tonnage Dues** :—1s. per reg. ton inwards ; 1s. per reg. ton outwards. Vessels under 75 tons pay port charges only once in 6 months. Vessels discharging or loading only part cargo pay tonnage dues at the rate of 24 c. per ton. **Bond Fee** :—3 dols. in full. **Harbour-master's Fee** :—1 dol. **Harbour Police Dues** :—Vessels under 100 tons, 2 dols. ; over 100 tons and under 200, 2 dols. 50 c. ; over 200 tons and under 300, 3 dols. ; over 300 tons and under 400, 4 dols. **Wharfage** :—Vessels inside the careening pay 2½ c. per ton per day whilst loading or discharging ; 3 c. per day if using careening pits for heaving down ; 1 c. per day if unemployed. **Lighterage** :—Inwards : General cargo, 4 dols. per 15 tons boat load ; coal, 35 c. per ton ; other cargo in proportion. Outwards : Sugar, 25 c. per hhd. ; molasses, 16 c. per puncheon ; other packages in proportion. **Labour** :—50 c. to 1 dol. per day. **Stevedore Charges** :—Hogsheads of sugar, 20 c. each ; molasses, 10 c. per puncheon ; other packages in proportion. **Ballast** :—Dirt ballast, 70 c. to 80 c. per ton. Stone can be obtained at 1 dol. 20 c. per ton free alongside. **Water** :—40 c. per 100 gallons, pumped on board. **Dunnage Wood** :—Scarce and dear. Imported firewood is used, and costs about 8 dols. per cord. **Hose Hire** :—For running molasses, 3 c. per puncheon. Vessels also pay half the cost of cooerage, which amounts to about 12 c. to 14 c. per puncheon. **Hospital** :—There is a hospital where seamen are admitted for a fee of £2 2s., and 1s. 6d. per day for every day the vessel is in port. Medical attendance on board, 10s. per visit. A medical officer is stationed at Barbados from the middle of April until the end of October every year for the purpose of fumigating steamers bound from an infected port to a United States port south of the southern border of Maryland, U.S.A. The services of the fumigation officer are free, the steamer only paying for the cost of materials, about £4 to £5. Fumigation for other vessels, £5 for sailing vessels, and £10 for steamers.

Pro Forma Charges on a steamer of 1,002 tons net reg., loading a full cargo of sugar, 1,300 hhds. :—

	Dols.	c.
Pilotage	7	00
Tonnage dues	240	48
Harbour-master's pass.	3	00
Harbour police fee	6	00
Bond fee, 3 dols. ; giving bond, 3 dols.	6	00
Bill of health	2	50
Stevedore	236	16
Water	13	15
Hire of blocks	3	84
Boat hire	31	50
Ship chandler's bill	160	77
Telegram advising sailing	15	78

726 18
36 30

To 5 per cent. interest on advance

762 48 = £155 13s. 6d.

West Indies (British).

JAMAICA.

About 100 miles S. of Cuba, and 100 miles W. of Haiti, lies the island of Jamaica, which with the Turks, the Caicos, and the Cayman Islands now form one British Colony, under the direction of a governor assisted by a legislative council. The total area of the colony is 4,424 square miles, with an estimated population of 830,261. The islands are fairly well provided so far as rail communication is concerned, whilst an excellent system of telegraph and telephone communication has been established by the colonial government. Although the sugar industry has depreciated to a considerable extent, owing to developments connected with the beet cultivation in Europe, the colony is making appreciable headway with its products, of which the rum produced is still counted the best in the world, and the coffee grown in certain districts of the Blue Mountains continues to command the highest price in the English markets. The centre of the export trade of the colony is Kingston on the S. coast, which is only one of the many good harbours to be found in the islands making up the colony of Jamaica.

HARBOUR DUES.

Harbours.	Registered Tonnage.	Vessels trading between the Tropics.	All other Vessels except Coasting Vessels.	Coasting Vessels.
		£ s. d.	£ s. d.	£ s. d.
Kingston	Under 70 tons	0 7 6	0 15 0	
	70 tons and over, but under 160	0 10 0	1 0 0	
	160 " " " 350	0 15 0	1 10 0	
	350 " " " 850	0 17 6	1 15 0	
	850 tons and upwards	1 0 0	2 0 0	
All other harbours {	Under 160 tons	0 5 0	0 10 0	
	160 tons and upwards	0 10 0	1 0 0	
Kingston harbour	Not exceeding per quarter			0 8 0
All other harbours	Not exceeding per quarter			0 1 6

The foregoing scale of fees is payable in respect of all vessels entering the harbours of the island, but steamers entering the same port more than once on the same voyage are not liable for a further payment; and vessels merely calling off a port or harbour for orders, and which do not take in or discharge cargo or ballast, nor take on board or land passengers, and do not come into the harbour further than the places where they are boarded by the health officer, are not required to pay fees.

Ships of war and private yachts of recognized yacht clubs are exempt from harbour dues, as well as ships putting into any port of the islands for repairs, or to obtain medical assistance; half fees are levied on vessels calling only for orders, coal, water, and necessary ship's stores, provided no passengers or cargo or ballast is landed or shipped: passengers may only be landed on account of sickness.

ANNOTTA BAY.

Annotta Bay is in lat. 18°12' N., long. 76°48' W., and is a second class port.

West Indies (British)—Annotta Bay (*continued*).**Population.**—About 2,000.**Imports.**—Food stuffs, clothing, hardware, and household requisites.**Exports.**—Bananas, cocoa, cocoanuts, pimento, and logwood.**Accommodation.**—The anchorage is close under the lee of a reef called the Schoolmaster Shoal, and has a depth of 25½ fathoms at high water and 25 fathoms at low water. The bank of soundings, however, is so extremely narrow and exposed that necessity alone should take a vessel to this anchorage. A vessel can leave with either sea or land wind.**Pilotage.**—Compulsory. Steamers or sailing vessels, inwards : Not exceeding 7 ft. (minimum), £1 10s. Outwards : £1 5s. For every additional foot or part of a foot, 4s. inwards and 3s. outwards.**Port Charges.—Entrance and Clearance:**—About £4. **Light Dues:**—Steamers, 1d. per ton, sailing vessels, 3d. per ton. **Wharfage** (fixed by law):—On principal goods, 4½d. per barrel; cases, 4½d. per foot. **Boat Hire:**—Lighters, 5s. to 8s. per day; boatmen extra. **Labour:**—1s. 6d. to 2s. per day for ordinary labour.**Pro Forma Charges** on a vessel of 379 tons reg. :—

	£	s.	d.
Light dues	4	14	9
Pilotage, inwards, 16 ft.	3	6	0
" outwards, 16 ft.	2	12	0
Four sloops for droghage	38	5	0
Cartage of 74 casks at 4s.	14	16	0
Droghage of cargo	21	8	0
Stowing	28	5	0
Boat attendance	1	12	0
Labour	4	0	0
Provisions	9	14	0
Entrance and clearance	4	0	0
Postages, etc.	1	4	0
Commission on £174 12s. 2d. at 5 per cent.	8	14	7
	<hr/>		
	£142	11	4

BLACK RIVER.

Black River, in lat. 18°6' N., long. 77°52' W., is situated at the mouth of the river of the same name.

Population.—900.**Imports.**—Bread-stuffs, provisions, clothing, hardware, drugs, etc.**Exports.**—Logwood, coffee, fustic, pimento, ginger, honey, wax, and annatto.**Accommodation.**—There is anchorage for small vessels in 20 ft. of water in front of the town, bottom of mud, about ½ a mile off shore. Large vessels anchor further out in 8 or 9 fathoms. The holding ground is very good, and the anchorage one of the best in Jamaica.**Pilotage.**—Compulsory. Rates according to the draught of the vessel : Inwards : £1 10s. for the first 7 ft., and 4s. per foot for every additional foot. Outwards : £1 5s. for the first 7 ft., and 3s. for every additional foot.**Port Charges.—Light Dues:**—3d. per ton. **Entrance and Clearance Fees:**—£3 4s. **Hospital Dues:**—1s. 6d. per day per man. **Labour:**—Labourers on board are paid from 3s. to 4s. per day. Wood is weighed

West Indies (British)—Black River (*continued*).

on board when brought down the river in lighters, which carry from 8 to 12 tons. **Scale-men** :—*4d.* per ton. **Wharfage** :—*1½d.* per cub. ft.; *4½d.* per barrel; *10s.* per ton on machinery, etc. **Brokerage** :—*1½* per cent. **Water** :—Water is supplied to vessels at £2 per vessel. **Provisions** :—Plentiful : fresh beef, *5d.* to *6d.* per lb.; vegetables, *2d.* per lb. **Harbour-master's Fee** :—£1.

Pro Forma Charges on a sailing vessel of 1,366 tons, in with ballast, out loaded, drawing 12 ft. :—

	£	s.	d.
Light dues	17	1	6
Cable	0	10	0
Harbour-master's fee	1	0	0
Pilotage, in and out	3	14	0
Consul's fees (German)	6	11	6
Stores, etc.	14	6	2
Cab hire	0	6	0
Postage	0	2	6
Doctor's bill	5	10	6
Water	2	0	0
Stevedore	12	8	0
Entrance and clearance	3	4	0
Sundry accounts	42	3	4
	<hr/> £108 17 6 <hr/>		

BLUEFIELDS.

Bluefields is in lat. 18°8' N., long. 77°59' W., about 7 miles E.S.E. of Savanna-la-Mar.

Accommodation.—Safe anchorage is to be had within a rocky ledge in 5 fathoms of water, and this anchorage, which lies about *1½* mile from the shore, has a depth across the ledge of *3½* to *4¾* fathoms. Vessels of large draught may anchor close to the W. side of the ledge in 9 to 10 fathoms, but it must be approached cautiously as the ledge is steep. Excellent fresh water is obtainable.

Pilotage.—Not compulsory.

CARLISLE BAY.

Carlisle Bay, in lat. 17°46' N., long. 77°17' W., is on the S. coast of Jamaica, about 6 miles N.E. of Milk River.

Exports.—Sugar and rum.

Accommodation.—It is an open roadstead. Anchorage in 18 ft. water, with the exception of Robertson's Shoal, which is in about *1¾* fathoms water at the lowest patch. A buoy is placed on the shoal. Kemp's Hill opens west of wharfinger's house, N. *½* W. clears Robertson's Shoal. Tide rises about 1 foot.

Port Charges.—The expenses at this port are the same as at Milk River, and also same arrangements as regards Custom House officer.

CAYMAN BRAC.

Cayman Brac, in lat. 19°38' N., long. 79°50' W., is 8 miles distant from Little Cayman and about 60 miles from Grand Cayman.

There is no harbour in this island.

West Indies (British).**FALMOUTH.**

Falmouth is in lat. 18°30' N., long. 77°42' W.

Population.—About 2,500.

Imports.—American flour-stuffs.

Exports.—Sugar, rum, logwood, and fustic.

Accommodation.—Falmouth Harbour can accommodate five steamers of about 1,000 to 800 tons reg. There is a depth of 7 fathoms at the entrance, and inside the harbour there is a depth varying from 2½ to 5 fathoms at the anchorage.

Pilotage.—Compulsory. Sailing vessels—Inward: Vessels drawing up to 7 ft., £2 5s.; each additional foot or part of a foot, 6s. Outwards: first 7 ft., £1 8s., and 6s. for each additional foot. Steamers—Half the above rates.

Port Charges.—**Entrance and Clearance:**—Steamers, £2 2s.; sailing vessels, £3 4s. **Light Dues:**—3d. per ton reg. (payable at one port only once in three months). **Harbour-master's Fee:**—For inspection of tonnage, usual charge, £1. **Labour:**—4s. per man per day from 6 a.m. to 6 p.m. **Boat Hire:**—4s. per day.

Pro Forma Charges on a steamer of 800 tons reg., in ballast drawing 12 ft. and out loaded, drawing 14 ft.:—

Harbour-master's fee	£	s.	d.
Entrance and clearance	1	0	0
Pilotage inwards	2	2	0
" outwards	1	17	6
Boat hire	1	15	0
Light dues	0	8	0
	10	0	0
	<hr/>		
	£17	2	6

GEORGETOWN (Grand Cayman).

Georgetown is the capital of Grand Cayman Island, in lat. 19°17' N., long. 81°20' W., and is situated on the W. end of the island, which is a dependency of Jamaica.

Population.—About 3,000.

Exports.—Turtle, cattle, hides, thatch rope, and a small quantity of dye-wood.

Accommodation.—Vessels of any draught can approach the W. shore to within a ¼ of a mile, but should not approach nearer than a mile on the N., E., and S. sides. The anchorage is off Georgetown in 7 fathoms, sandy bottom, but is not safe during N.W. and S.W. winds.

Pilotage.—Not compulsory. Charge about £1 1s.

Port Charges.—**Anchorage Dues:**—8s. **Light Dues:**—1d. per ton. **Water:**—Can be obtained from Government cisterns at 1s. 3d. per 100 gallons. **Provisions** and ship's stores can be had; beef, 4½d. per lb.

KINGSTON.

Kingston Harbour is in lat. 18°0' N., long. 76°49' W.

Population.—80,000.

West Indies (British)—Kingston (*continued*).

Imports.—Dry goods, hardware, and food-stuffs.

Exports.—Fruit, sugar, and rum.

Accommodation.—Kingston Harbour is a large and spacious inlet, running E. and W., formed by the Palisadoes, and capable of containing any number of vessels of the largest size. Vessels of large draught lie alongside the wharves of the town, above which the water deepens to 9 fathoms. Wooden piers run at right angles to the shore, with depths of from 20 to 30 ft. alongside. Tide rises and falls about 12 in. Vessels proceed from Port Royal to Kingston by a channel varying from 6 to 9 fathoms in depth, which, in the narrowest part, is a little over a cable in width, the channel throughout the anchorage at Kingston being well buoyed and staked. At Kingston there is good holding ground, in 5 to 10 fathoms, off the town. The majority of vessels lie alongside the different wharves to discharge or take in cargo, with their heads to the E., the depth of water ranging from 12 to 36 ft. There is a patent slip here which will take vessels of 1,500 tons. The cradle is 212 ft. long and 51 ft. wide; depth on the blocks, 6 ft. forward and 18 ft. aft. Repairs are executed.

Pilotage.—Compulsory. Sailing vessels : Between beyond the prescribed distance (Cow Bay Point to the east and Wreck Reef to the south) and Kingston, not exceeding 7 ft., £2 5s. inward ; £1 8s. outward. For each additional foot or part of a foot, 6s. inward ; 4s. outward. Between beyond the prescribed distance and Port Royal, not exceeding 7 ft., £1 7s. inward ; 17s. 6d. outward. For every additional foot or part of a foot, 3s. 6d. inward ; 2s. 6d. outward. Between within the prescribed distance and Kingston or Port Royal, one-half of the above fees respectively. Between Kingston and Port Royal, not exceeding 7 ft., 18s. inward ; 10s. 6d. outward. For every additional foot or part of a foot, 2s. 6d. inward ; 1s. 6d. outward. Into or out of Old Harbour, Salt River, Savanna-la-Mar, and Falmouth, not exceeding 7 ft., £2 5s. inward ; £1 8s. outward. For each additional foot or part of a foot, 6s. inward ; 4s. outward. Into or out of any other port, not exceeding 7 ft., £1 10s. 6d. inward ; £1 5s. outward. For each additional foot or part of a foot, 4s. inward ; 3s. outward. Steamers : Half the above rates.

Port Charges.—**Harbour-master's Fees** :—15s. to £2 per vessel, according to size. **Light Dues** :—Sailing vessels, 3d. per reg. ton ; steamers, 1d. per reg. ton every three months. Vessels trading within the tropics pay light dues once in twelve months. **Shipbroker** :—Entrance, £3 4s. ; clearance, £3 4s. **Stevedores** :—Sugar, about 1s. per hhd. ; rum, 1s. per puncheon ; logwood, 1s. per ton ; cocoanuts, 1s. per 1,000 ; other packages in proportion. **Boat Hire** :—For running ship's lines, about 6s. **Labour** :—On dock, 3s. per day ; on board, 4s. **Ballast** :—Obtained from the quarry at Rock Fort, and put on board vessels by convict labour at a charge of 2s. per ton. If loaded at Kingston, 3s. 6d. per ton. **Water** :—Obtained from the Water Company at the following rates : Vessels of 70 to 150 tons reg., 12s. ; 151 to 250 tons, 24s. ; 251 to 350, 36s. ; 351 to 500, 48s. ; 501 to 700, 60s. ; 701 to 1,000, 72s. ; 1,001 to 1,400, 84s. ; 1,401 to 2,000, 96s. ; 2,001 to 3,000, 108s. ; vessels of 3,001 tons reg. and upwards, 120s. **Coal and Provisions** can be readily obtained at reasonable market prices.

Pro Forma Charges on a steamer of 2,000 tons reg., with a cargo of general merchandise in and ballast out, drawing 20 ft. loaded :—

West Indies (British)—Kingston (*continued*).

	£	s.	d.
Light dues at 1 <i>d.</i> per reg. ton	8	6	8
Entrance	3	4	0
Clearance	3	4	0
Pilotage, in and out	4	16	6
Boat hire (running lines)	0	6	0
Harbour-master's fees	2	0	0
Water rate	4	16	0
Ballast, 400 tons at 2 <i>s.</i> per ton	40	0	0

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LITTLE CAYMAN ISLAND.

Little Cayman, in lat. 19°38' N., long. 80°0' W., is about 60 miles distant from Grand Cayman.

Population.—Of Little Cayman and Cayman Brac, 1,500.

Imports.—Yellow pine, lumber, and general goods.

Exports.—Cocoanuts and turtle-shell.

Accommodation.—There are two harbours in Little Cayman, one at the E. end of the island, with a depth of 10 ft. at high tide and 9 ft. at low tide; the other on the S. side of the island and 2 miles from the W. harbour. The western harbour is abreast of the town, and has an average depth of 7 ft. There is a light erected at the Central District, also a Custom House.

Pilotage.—Not compulsory.

Port Charges.—**Light Dues:**—1*d.* per ton. **Boat Hire:**—6*s.* per day. **Labour:**—From 3*s.* to 4*s.* per day.

Water and fresh provisions can be obtained at cheap rates.

LUCEA.

Lucea is in lat. 18°28' N., long. 78°14' W.

Accommodation.—Although small, this is one of the best harbours on the N. side of Jamaica. The anchorage is in 3 to 4 fathoms, clay bottom, about 2 cable-lengths off the town.

Fresh water and supplies of all kinds can be obtained.

MILK RIVER.

Milk River is in lat. 17°57' N., long. 77°26' W., on the S. coast of Jamaica.

Imports.—Shooks for orange packages.

Exports.—Logwood, fustic, bitterwood, oranges, honey, and hides.

Accommodation.—It is an open roadstead. Anchorage in 15 ft. of water, about 1½ miles off shore, in line with a conspicuous round hill, with a beacon on shore at the river's mouth. There is 20 ft. of water about 2 miles off, and vessels with heavy draught have to shift outside when loading. From the entrance of the river to the wharf where the produce is shipped is about 5 miles, and this is where the shipmasters have to proceed to get entered. Although there is no Custom House an officer comes from Alley to Milk River when he is required.

Pilotage.—Not compulsory. Vessels not exceeding 7 ft., 30*s.* inwards, 25*s.* outwards, and 4*s.* for each additional foot.

Port Charges.—**Harbour Dues:**—Vessels over 170 tons, £1.

West Indies (British)—Milk River (*continued*).

Light Dues :—3*d.* per ton. **Stevedore** :—Discharging, 4*s.* per day. **Entrance and Clearance** :—£3 4*s.*; commission on advances, 5 per cent. **Loading** :—Cargo is sent free on board in flat-bottomed boats of about 4 to 5 tons, and 30 to 50 tons a day can be loaded. **Custom Officer's Overtime** :—2*s.* 6*d.* from 4 to 8 p.m. and after 8 p.m. 3*s.* 9*d.* **Provisions** :—Fresh beef can be had once a week, and fish every other day.

Pro Forma Charges on a vessel of 432 tons reg., drawing 16 ft. loaded :—

	£	s.	d.
Light dues	5	8	0
Stevedore, 11 <i>d.</i> per ton of 22 cwt. (393½ tons)	18	0	9
Travelling expenses to Alley	0	12	0
Labour, 5 men, 5 days at 3 <i>s.</i> each	3	15	0
Harbour master	1	0	0
Commission to agent	5	0	0
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	£33	15	9
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MONTEGO BAY.

Montego Bay is in lat. 18°30' N., long. 77°55' W.

Population.—6,500.

Exports.—Sugar, rum, coffee, bananas, pimento, ginger, oranges, annatto, goat-skins, and dye-woods.

Accommodation.—It is an open roadstead, but quite safe, except from northers, which bring in a heavy sea. Good supplies can be had at moderate prices.

Pilotage.—Compulsory. Sailing vessels—Inwards: 30*s.* for first 7 ft.; 4*s.* for each additional foot. Outwards: 25*s.* for first 7 ft.; 3*s.* for each additional foot. Steamers—Half rates.

Port Charges.—Vessels under 160 tons, 10*s.*; over 160 tons, £1.

Light Dues :—Steamers: 1*d.* per reg. ton. Sailing vessels: 3*d.* per reg. ton., payable once in 3 months. **Shipbroker** :—Entrance and clearance, £3 4*s.*; commission on freight, 5 per cent. **Stevedore** :—Loading, 1*s.* per ton; discharging, 9*d.* per ton. **Water** :—Supplied at the public landing place at 1*s.* per 100 gallons.

OLD HARBOUR.

Old Harbour, in lat. 17°58' N., long. 77°13' W., was closed as a port of entry on November 1, 1905.

PORT ANTONIO.

Port Antonio, in lat. 18°9' N., long. 76°31' W., is about the third port in importance of Jamaica.

Population.—4,000.

Imports.—Fish, ironmongery, machinery, merchandise, beer, spirits, wines, salt, soap, and lumber.

Exports.—Bananas, oranges, cocoanuts, logwood, limes, pimento, and grape fruit.

Accommodation.—Port Antonio has two harbours, the eastern and western, the western one being mostly used. In the eastern harbour

West Indies (British)—Port Antonio (*continued*).

there is anchorage in from 5 to 11 fathoms, mud bottom ; and in the western, leading into mid-channel, from 9 to 13 fathoms, with good room for swinging. The western harbour is safe against any kind of storm or hurricane. There is a white light on Folly Point, which is visible for 10 to 12 miles off shore in ordinary weather. Leading on to Folly Point there is 7 to 8 fathoms of water to the entrance of the eastern and western harbours. There is a beacon on Fort Reef, and a red beacon on Navy Island shoal. Connected by rail with Kingston and Montego Bay.

Pilotage.—Steamers—Inwards : 15s. for first 7 ft. ; 2s. for every additional foot or part of a foot. Outwards : 12s. 6d. for first 7 ft. ; 1s. 6d. for every additional foot or part of a foot. Sailing vessels—Double the above rates.

Port Charges.—Harbour Dues :—£1 per vessel. **Light Dues** :—Steamers : For Folly Point, $\frac{1}{4}$ d. per ton on each entry of vessel ; for general lights, 1d. per ton, payable quarterly. Sailing vessels : 3d. per ton per year. **Customs Overtime** :—3s. 9d. per hour between 8 p.m. and 6 a.m. Attendance on vessels at other times, free. **Water** :—25s. per vessel.

PORT MARIA.

Port Maria is in lat. 18°24' N., long. 76°58' W.

Population.—2,700.

Exports.—Logwood, pimento (allspice), cocoanuts, fruit, and cocoa.

Accommodation.—Port Maria is a small harbour where six to ten ships can lie, according to their size. It is open to winds from the N. round to E.S.E. The anchorage is in from 4 to 5 fathoms of water. Vessels lie with both anchors out. The holding ground is good, and, although northers send in a heavy sea, a strong undertow prevents any strain on the cables.

Pilotage.—Vessels not exceeding 7 ft., £1 10s. inwards and £1 outwards. For every additional foot or part of a foot, 4s. inwards and 3s. outwards.

Port Charges.—Harbour-master's Fee :—Vessels under 160 tons, 10s. Above 160 tons, £1. Coasting vessels are exempt. **Stevedores** :—3s. per day per man for labourers, and according to arrangement for the boss.

PORT MORANT.

Port Morant is in lat. 17°56' N., long. 76°26' W.

Exports.—Bananas and logwood.

Accommodation.—Port Morant is a small secure bight, about 1 mile wide and $1\frac{1}{2}$ mile deep, N. and S. ; open from the latter quarter, with a depth of 6 to 7 fathoms, right up to Bowden Wharf. The rise and fall of the tide is very slight.

Pilotage.—Compulsory. Charges for all vessels : Inwards, up to 7 ft. draught, 45s. ; for each additional foot, 6s. Outwards, up to 7 ft. draught, 28s. ; for each additional foot, 4s.

Port Charges.—Entrance and Clearance :—£3 4s. **Light Dues** :—Payable once every 3 months or once every 12 months for vessels trading in the tropics only. Steamers, 1d. per reg. ton ; sailing vessels, 3d. per reg. ton. **Labour** :—2s. to 2s. 6d. per day.

West Indies (British)—Port Morant (continued).

Pro Forma Charges on a vessel of 366 tons reg. :—

	£	s.	d.
Point lighthouse, and harbour master's fees	13	1	6
Pilotage, £6; water, 14s.	6	14	0
Fresh meat, vegetables, etc.	1	11	0
Labour, etc.	2	2	0
Entering and clearing, £3 4s.; bill of exchange, 2s. 9d.	3	6	9
	<hr/> £26 15 3 <hr/>		

ST. ANN'S BAY.

St. Ann's Bay is in lat. 18°25' N., long. 77°19' W.

Population.—1,615.

Imports.—Salt and pickled provisions, flour-stuffs, hardware, oils, lumber, cement, and clothing.

Exports.—Bananas, oranges, cocoanuts, dye-woods, pimento (allspice), cocoa, lime-juice, coffee, sugar, rum, skins, wax, and honey.

Accommodation.—The harbour is a basin formed within coral reefs, 2 cables in diameter, with a narrow but deep entrance, 11 fathoms in depth. Vessels require to moor astern, and should select a berth at the W. side of the harbour to obtain the shelter of the reefs during N. wind. There are two mooring buoys at the W. end of the harbour. At the entrance, there are two buoys placed E. and W. There are no piers, loading and unloading being done by means of lighters. The anchorage is safe except during cyclones.

Pilotage.—Not exceeding 7 ft., £1 inwards and £1 5s. outwards. Every additional foot, or part of a foot, 4s. inwards and 3s. outwards.

Port Charges.—**Harbour-master's Fee** :—Vessels under 160 tons, 10s.; over 160 tons, £1. Coasting vessels are exempt. **Stevedores** :—3s. per day for labourer, and according to arrangement for overseer. Overtime, 6d. per hour for labourers, 9d. for foreman, and 1s. for boss. **Ballast** :—Sand, 2s. per ton delivered alongside. **Water** :—About 2s. per 100 gallons. **Provisions** are procurable, consisting of yams, potatoes, fresh and salted beef, flour-stuffs, fruit, etc. **Light Dues** :—1d. per ton. Steamers only pay light dues once in three calendar months.

Pro Forma Charges on a vessel of 1,800 net reg. tons :—

	£	s.	d.
Harbour-master's fee	1	0	0
Lighthouse dues	7	10	0
Pilotage inwards	3	6	0
„ outwards	2	15	0
Stevedores	10	0	0
Mooring	0	4	0
Unmooring	0	4	0
Entrance and clearance	3	3	0
	<hr/> £28 2 0 <hr/>		

SALT RIVER.

Salt River is in lat. 18°0' N., long. 76°49' W.

Imports.—Agricultural implements, etc.

Exports.—Sugar, rum, honey, and dye-woods.

West Indies (British)—Salt River (*continued*).

Accommodation.—Vessels anchor off the entrance of the river in 3 fathoms. Large vessels will find a well-sheltered anchorage in 5 fathoms, close up under the N.W. side of Salt Island.

Pilotage.—Compulsory. Sailing vessels—Inwards : Up to 7 ft., £2 5s. Every additional foot, 6s. Outwards : up to 7 ft., £1 8s. Every additional foot, 4s. Steamers pay half rates.

Port Charges.—**Light Dues** :—Steamers, 1d. per ton. Sailing vessels, 3d. per ton. **Shipbroker** :—Entrance and clearance, £3 4s.

Labour :—About 3s. 6d. per day.

Pro Forma Charges on a steamer of 1,000 tons reg. with a cargo of merchandise in and ballast out, drawing 16 ft. loaded :—

	£	s.	d.
Light dues	4	3	4
Entrance and clearance	3	4	0
Pilotage in	2	9	6
" outwards	1	12	0
Labourers, 20 men at 3s. 6d. per day	3	10	0
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	£14	18	10
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SAVANNA - LA - MAR.

Savanna-la-Mar, in lat. 18°14' N., long. 78°10' W., is one of the most important commercial towns on the island.

Population.—3,950.

Imports.—Ironmongery, machinery, cottons, linens, woollen and fancy goods, beer, spirits, wines, soap, salt, provisions, lumber, etc.

Exports.—Sugar, rum, fustic, logwood, coffee, pimento, hides, ginger, beeswax, oranges, lime-juice, sarsaparilla, annatto, etc.

Accommodation.—The anchorage is formed by a line of reefs running along the shore, and abreast of the town, and nearly 1½ miles off. Depth of water inside the reef, 22½ ft. at high water. Shoaling, but good holding ground. Depth at outer anchorage, where vessels are moored whilst loading, 26 ft. at high water. There are several wharves and jetties with from 2½ to 8½ ft. alongside. A 5-ton crane is on the Town Wharf, and there are two cranes (a 2½ and a 3-ton) on the private wharves. There are lines of steamers from Glasgow, London, New York and Halifax, and a coasting steamer connecting all the ports of the island with this port.

Pilotage.—Inwards : not exceeding 7 ft., £2 5s., and 6s. for each additional foot or fraction of a foot. Outwards : not exceeding 7 ft., £1 8s., and 6s. for each additional foot or part of a foot. Steamers pay half the above rates. **Removals** :—Vessels of large draught commence loading at the inner anchorage, and pay £1 to the pilot for shifting to deep water.

Port Charges.—**Light Dues** :—3d. per ton. **Harbour Dues** :—Vessels under 160 tons, 10s; over 160 tons, £1. Vessels trading within the tropics pay half this rate. **Harbour-master's Fee** :—On all vessels over 160 tons, £1. **Lighterage** :—Dye-woods, 2s. per ton; sugar, 2s. per hhd.; rum, 1s. per puncheon; and pro rata for other articles from town to the ship. Much produce is shipped from wharves lying 1 to 10 miles along the coast of the bay, for which lighterage is charged in proportion to the harbour rates. **Stevedores** :—Stowing sugar, 1s. per hhd.; 9d. per tierce;

West Indies (British)—Savanna-la-Mar (*continued*).

rum, 9*d.* per puncheon; dye-wood, 1*s.* per ton; minor articles at 3*d.* per barrel; pimento, 1½*d.* to 2*d.* per bag. **Brokerage** :—£3 4*s.* for entrance and clearance at Customs. Commission on advances, 5 per cent. **Ballast** :—Stone or rubble is taken from ship's sides free of charge.

TURKS AND CAICOS ISLANDS.

The Turks and Caicos Islands, although a dependency under the Government of Jamaica, are geographically a portion of the Bahamas, of which they form the two south-eastern groups. They consist of thirty islands and cays, of which, however, only eight are inhabited. They have a combined area of 165 square miles and a population of about 5,500. The largest island is Grand Caicos (20 miles long by 6 miles broad), but the most important is Grand Turk (7 miles long and 2 miles broad), the seat of Government being here. Here there is a port of entry, other such ports being at Cockburn Harbour (a small place in South Caicos) and at Salt Cay. Salt is the chief export, and is loaded at about 200 tons a day. Sisal of extra good quality is being produced at E. and W. Caicos.

At Grand Turk vessels anchor on a coral reef about ½ a mile from the shore, where there is sufficient water for the largest ships. Vessels of 16 ft. draught, and under, anchor in a small inlet called Hawk's Nest, where they are well sheltered. Hawk's Nest anchorage is in lat. 21°21' N., long. 71°7' W. During the prevailing winds from the N.E. this anchorage is safe, and vessels have no occasion to slip unless a "norther" comes on, which, however, seldom happens.

Mail steamers calling here pay no dues or charges of any kind, whilst for other vessels these amount to very small sums. Pilotage is optional, but if a ship enters the port, and lands or takes cargo, she has to pay the pilot who speaks her one-half of the inward pilotage rates. Fresh water and moderate supplies may be obtained.

Pilotage.—Rates, inwards: 20*s.* for the first 100 tons net reg.; 1½*d.* for each additional ton up to 200 tons, and 1*d.* for every ton over 200. Outward pilotage one half of inward rate except in the case of Hawk's Nest, where the full rate is payable both ways. **Removals** :—From one anchorage to another, half inward rate, or if pilots are employed by the day, 9*s.* per day. Pilotage is payable by vessels calling for orders, provisions, water, or fuel :—Inwards: Vessels of 100 tons, 10*s.*, and ¾*d.* for each additional ton to 200 tons, and ½*d.* for every additional ton. Outward, or removals, half the above rates. Detention, 3*s.* per hour.

Port Charges.—4*d.* per net reg. ton, this being the only charge beyond pilotage. **Ballast** discharged 20 c. per ton.

Pro Forma Charges on a British barquentine of 635 tons net reg., at Grand Turk, Turk Islands :—

	£	s.	d.
Light fee, at 4 <i>d.</i>	10	11	8
Pilotage	6	17	6
Bill of health (American)	1	0	10
Small stores	6	2	10
Discharging ballast and trimming salt	6	17	5
Cash to captain	0	16	8
Commission advancing 5 per cent.	1	12	6

£33 19 5

*West Indies (British).***LEEWARD ISLANDS.**

This is a British Crown Colony consolidated under the name of the Leeward Islands, comprising the islands of Antigua, with Barbuda and Redonda, St. Christopher (better known as St. Kitts), Dominica, Montserrat, Nevis, and the Virgin Islands.

The group is divided into five presidencies governed by one federal executive council nominated by the Crown, and one legislative council, in which eight members are nominated, and eight are elected members.

The total area of the colony is 701 square miles, with a population estimated on the census taken in 1901 at 130,000. The staple products of the islands, and the chief exports, are sugar, coffee, cotton, cocoa, and arrowroot, and the imports general merchandise, particularly textile fabrics. Charlotte Town is the capital, and the islands are in cable communication via the West India and Panamá Company's telegraph cable with the various countries served by this line, and in direct steam communication with the United Kingdom, New York, and Canada.

BARBUDA.

Barbuda Island is in lat. $17^{\circ}40'$ N., long. $61^{\circ}50'$ W.

Population.—About 800.

Imports.—Food-stuffs.

Exports.—Cotton, cattle, and horses.

Accommodation.—Barbuda has no harbour, but there is a roadstead on the W. side, where vessels can anchor in 5 to 6 fathoms, about a mile and a half from shore. Landing is dangerous between the months of November and May, on account of the rollers which then prevail.

Fresh water is scarce, but fresh provisions are plentiful and reasonable in price.

BASSE-TERRE (St. Kitts).

Basse-Terre, in lat. $17^{\circ}18'$ N., long. $62^{\circ}42'$ W., is the capital of the Island of St. Christopher, more generally known as St. Kitts.

Population.—10,000.

Imports.—Flour, corn, meal, rice, fish, timber, oils, haberdashery, and cotton goods.

Exports.—Sugar, molasses, rum, and cotton.

Accommodation.—Basse-Terre is an open roadstead, situated on the S.W. of the island. There is good accommodation for vessels in 6 to 10 fathoms, good holding ground. There is no tide. There are two public piers, 200 ft. long, each having four cranes to lift up to 4 tons. Vessels usually anchor in 8 or 9 fathoms, sandy bottom, about half a mile from the pier. Loading and discharging is done by means of lighters carrying about 2 tons.

Pilotage.—Not compulsory, unless vessels proceed to other ports on the island to load, when the stevedore generally acts as such, charging 3 dols.

Port Charges.—Tonnage Dues:—1s. per ton on all cargo

West Indies (British)—Basse-Terre (St. Kitts) (continued).

landed or loaded at any port within the Presidency. Vessels under 30 tons reg. pay 1s. per reg. ton once a year. Vessels in ballast or carrying salt only pay no tonnage dues. Vessels discharging part of their cargo pay package dues for the amount landed, viz., 3 c. per barrel; 12 c. per puncheon; lumber, 36 c. per cub. metre; measurement goods, 24 c. per 40 cub. ft. **Stevedore's Charges**:—24 c. per hhd. Other packages in proportion. **Lighterage**:—Bread-stuffs, per load of 8 barrels, provisions, per load of 6 barrels, 32 c. Corn, 32 c. per load of 32 bushels. Stone ballast, 72 c. per ton. Water, 36 c. per puncheon. **Boat Hire**:—1s. per trip, or 6s. per day. **Ballast**:—3s. per ton. **Provisions**:—Fresh meat, 7d. per lb; sweet potatoes, 6s. per barrel; yams, 12s. per 100 lb. With these two exceptions, vegetables are scarce. **English Bill of Health**:—Free.

Pro Forma Charges on a schooner of 249 tons, leaving with a cargo of molasses:—

	£	s.	d.
Package dues	15	11	6
Stevedore	12	19	2
Hire of hose and tub, 593 puns. at 1½d.	3	14	1½
Bill of health	1	0	10
Discharging ballast	1	18	6
Labour	6	14	6
	£41	18	7½

Pro Forma Charges on a steamer of 2,312 tons loading part cargo of 1,000 tons of sugar in bags and barrels:—

	£	s.	d.
Package dues, 9,000 bags at 1½d.	56	5	0
Stevedores at 1½d.	46	17	6
Boat hire, 2 days	0	12	0
Labourers on board, 6 men at 4s. per day for 2 days	2	8	0
Brokerage	5	4	2
	£111	6	8

CHARLESTOWN (Nevis).

Charlestown, the capital of Nevis Island, is situated on the W. side of the island in lat. 17°6' N., long. 62°32' W.

Population.—Of the island, 12,774.

Imports.—See Basse-Terre.

Exports.—Sugar, molasses, and cotton.

Accommodation.—Charlestown possesses an excellent but open roadstead, forming a safe anchorage during the prevailing winds. The usual anchorage is in 5 fathoms of water. Cargo is loaded and discharged by 12 ton lighters.

Port Charges:—**Pilotage**:—Not compulsory. Sailing vessels—About 5 c. per ton. **Boat Hire**:—1s. 4d. per hour. **Ballast**:—2s. 6d. per ton. **Labour**:—6d. per hour during the day, and 1s. 4d. at night. **Tonnage Dues**:—1s. per ton, which includes doctor's attendance (if required). **Stevedore**:—4s. per day. **Brokerage**:—About 10s. on freight. Agent's charge for transacting ship's business, £3 3s. **Lighterage**:—Sugar, 1s. per hhd.; molasses, 6d. per puncheon; bread-stuffs, etc., 3d. per lb. **Water**:—½d. per gallon. **Provisions** can always be procured from St. Kitts, between which and Nevis there is communication several times a day. Fresh meat, 7d. to 8d. per lb.

West Indies (British).**ENGLISH HARBOUR (Antigua).**

English Harbour is in lat. $17^{\circ}0' N.$, long. $61^{\circ}47' W.$, and is situated on the S. side of the Island of Antigua.

Accommodation.—This harbour is one of the best in the West Indies, having a depth of 40 ft. alongside the wharves, but there is not room for modern steamers to turn. Only men-of-war come here.

PLYMOUTH (Montserrat).

Plymouth, in lat. $16^{\circ}43' N.$, long. $62^{\circ}10' W.$, is the chief town in Montserrat.

Population.—Of the island, about 13,127.

Exports.—Sugar, molasses, lime-juice, arrowroot, cotton, papain, onions, etc.

Accommodation.—The best anchorage is off the town of Plymouth, in 5 fathoms, close to the shore, deepening rapidly to 20 fathoms. Vessels are loaded and discharged by boats of $1\frac{1}{2}$ to 4 tons. General cargo can be landed at the rate of 10 tons per hour. There is a wooden jetty, 320 feet in length, 1 crane to lift up to 2 tons, and 1 crane to lift up to 5 tons.

Port Charges.—There are no pilotage, port, or other dues.

Water :—6d. per 100 gallons.

Mail steamers call once a fortnight.

REDONDA ISLAND.

Redonda Island is in lat. $17^{\circ}0' N.$, long. $62^{\circ}5' W.$

Population.—About 150.

Imports.—Food-stuffs.

Export.—Phosphate of alumina.

Accommodation.—There is a safe anchorage for steamers or sailing vessels of the largest size, and phosphate can be loaded at the rate of 150 tons per day. Steamers anchor on the W. side of the island, stern on the shore, about 25 fathoms N. of the jetty, and at right angles to the shore and about 50 fathoms out. At this point there is a mooring rock marked on its W. face with a white shield, with a red perpendicular bar down the centre. At 37 fathoms seaward, and 7 fathoms in depth, there begins a deep bed of sand, which continues out as far as soundings have been taken, and this sand continues along the whole of the W. side of the island, and affords secure anchorage. For 37 fathoms seaward, and W. of the mooring rock, the bottom is rock.

Pilotage.—Compulsory.

Port Charges.—None.

ROAD HARBOUR (Tortola).

Road Harbour, in lat. $18^{\circ}28' N.$, long. $64^{\circ}37' W.$, is on the S.E. side of Tortola Island.

Population.—400.

Accommodation.—The harbour is open to the S.E., but the

West Indies (British)—Road Harbour (Tortola) (continued).

anchorage is good, on a sandy bottom. During the winter season a heavy swell prevails. The depth available for vessels entering the port at high water ordinary spring tides is 24 ft. In the port there is about 16 ft. at high water and 14 ft. at low. Vessels load and discharge by means of boats.

Port Charges.—Tonnage Dues :—Vessels up to 20 tons, 1s. 6d. per ton; and 9d. for every ton over 20 tons. **Boarding Fees :—**4s. **Wharfage :—**1d. per parcel. **Water :—**1s. 6d. per puncheon.

ROSEAU (Dominica I.).

Roseau, in lat. 15°19' N., long. 61°26' W., is the capital of the island of Dominica.

Population.—Total population of the island 30,289.

Imports.—Dry goods, hardware, lumber, spirits, wines, American bread-stuffs, codfish, etc.

Exports.—Coffee, cocoa, lime-juice, citrate of lime, oil of limes, oil of bay, spices, and fruit.

Accommodation.—Roseau is the principal roadstead, the anchorage for large vessels being about one cable off the shore in 13 to 18 fathoms. Small craft can go further in. Loading and discharging is done by canoes carrying 1 ton each. No bar or reef. Crane on the jetty to lift 1 ton; another to lift 2 or 3 tons. There are two large iron buoys for the use of steamers. Prince Rupert's Bay, about 18 miles N. of Roseau, has sufficient water for the largest vessels.

Port Charges.—Tonnage Dues :—1s. 2d. per ton on all cargo loaded or discharged. Vessels loading in this island and clearing outwards with fruit only are free of tonnage dues. **Harbour Dues :—**On all cargo loaded or discharged, up to 10 tons, 5s.; 11 to 25 tons, 10s.; 26 to 50 tons, 15s.; 51 to 100 tons, 25s.; 101 to 150 tons, 35s.; 151 to 200 tons, 40s.; exceeding 200 tons, 50s. **Buoy Fees :—**Use of the buoy for 3 hours, 5s.; for 6 hours, 10s.; 12 hours, 15s.; 24 hours, 20s.; and for any period exceeding 24 hours the same tariff. From 6 p.m. on Saturday to 6 a.m. on Monday, when no cargo is handled, 10s. **Bill of Health :—**4s. Foreign bills of health are not accepted unless viséd by the British consul at the port of departure.

ST. JOHN'S (Antigua).

St. John's, in lat. 17°5' N., long. 61°54' W., is the capital, and the chief commercial port on the Island of Antigua, nearly all the produce of the island being brought here in droghers for exportation. Distance by sea from Liverpool, 3,750 miles.

Population.—9,262.

Imports.—Food-stuffs, lumber, and all manufactured goods.

Exports.—Sugar, rum, molasses, pine-apples, sea-island cotton, tamarinds, and lime-juice.

Accommodation.—The harbour is secure against all winds except hurricanes, but confined and inconvenient. Vessels of 14 ft. draught can come up to $\frac{3}{4}$ of a mile from the wharves, those drawing over 14 ft. are obliged to load in the roads, about 2 to 3 miles from the wharves. The

West Indies (British)—St. John's (Antigua) (continued).

harbour is exposed to the rollers, which break over the wharves, but this is only with a N.W. wind, which is very rare. The depth on the bar at low water is 17 ft. There are cranes to lift from 2 to 10 tons on the private wharves. Repairs of a small nature can be executed.

Pilotage.—Not compulsory. According to agreement.

Port Charges.—**Tonnage Dues** :—1s. per reg. ton, or 9d. per ton of cargo loaded ^{and} discharged. **Port Dues** :—Vessels of 300 tons and upwards, £1 12s. **Shipbroker** :—Entrance and clearance, £2 2s. to £3 3s. **Stevedores** :—6d. per hour. Discharging ballast into lighters, 1s. per ton. Loading sugar, 1½d. per bag. Other goods in proportion. Steamers not breaking bulk pay harbour dues, £1 12s. only. **Ballast** :—Sand, 60 c. per ton; stone, 96 c. per ton. **Rafting** lumber, white pine and pitch pine, 30 c. and 1s. 3d. per 1,000 sup. ft. **Water** :—50 c. per puncheon of 150 gallons. **Bill of Health** :—4s.

Vessels calling off to try the market or seek freight can remain 48 hours in port without any expense.

Pro Forma Charges on a steamer of 2,426 tons reg., discharging 41 tons cargo, and loading 1908 tons :—

	£	s.	d.
Tonnage dues, inwards	2	14	9
" " outwards	85	13	0
Porterage, warehousing 41 tons	0	3	7½
Customs launch	0	2	6
Provisions, etc.	21	2	7
Tally clerks	3	10	10
Harbour dues	1	12	0
Bill of health	0	4	0
Porterage of mails	0	1	0
Stevedore, loading 1,908 tons, discharging 41 tons	104	15	10
Boat for taking off and bringing stevedore ashore	1	10	0
Dunnage wood, 4 cords delivered alongside	2	10	0
Boat hire, taking off ship's papers and agent	0	8	0
Boat hire, 5 days, use of ship	1	10	0
Entrance and clearance at Customs	0	16	0
Cooper's account	1	3	5
Lighterage, 41 tons of cargo to shore	6	3	0
	£234	0	6½

SOMBRERO (Virgin Islands).

Sombrero Island, in lat. 18°35' N., long. 63°30' W., is no longer visited by vessels, the phosphate of lime, with which the island was at one time covered, being exhausted.

TRINIDAD AND TOBAGO.

These two islands, which are linked for administrative purposes, lie immediately N. of the mouth of the Orinoco River. They have a combined area of 1,868 square miles, with a total estimated population, on March 31, 1908, of 334,543. The annual trade is of a value of a little over 7¼ millions, the imports during the fiscal year, 1907–8, being valued at £3,374,824 and the exports at £3,907,503. The articles imported include flour, butter substitutes, coal and patent fuel, oats, fish, hardware, malt liquors, textiles, tobacco, and wines; the chief articles of export being

West Indies (British)—Trinidad and Tobago (*continued*).

cocoa, sugar, and asphalt. The large quantities of coal and patent fuel recently imported are evidence of the efforts being made to establish a coaling station at Port of Spain. There is a well-organized postal, telegraph, and telephone service, whilst in 1906 the wireless telegraph system was established between Trinidad and Tobago, and has since given satisfactory results. Every opportunity of communicating with ships equipped with wireless apparatus has been taken advantage of, messages having been received at the Trinidad station from St. Vincent (200 miles distant), and at the Tobago station from points 150 miles away.

In commercial circles accounts are kept in dollars and cents, but in the public offices the British currency only is recognized. The Colonial Bank is a bank of issue, with a note circulation of about £200,000. A branch of the Union Bank of Halifax also provides banking facilities.

PORT OF SPAIN (Trinidad).

Port of Spain, in lat. $10^{\circ}41'$ N., long. $61^{\circ}30'$ W., the seat of government and capital of Trinidad, is situated on the Gulf of Paria. Shortest sea route from Liverpool, 3,900 miles.

Population.—54,100.

Imports.—Cottons, linens, woollens, silks, codfish, lumber, bread-stuffs, etc.

Exports.—Cocoa, sugar, molasses, rum, coffee, cocoanuts, asphalt, Angostura bitters, etc.

Accommodation.—The usual anchorage is in 5 fathoms outside in soft mud, gradually shoaling towards the shore. There are hulks moored in the gulf for the convenience of heaving down and coaling. The prevailing winds in the gulf are N.E. and E. There is good anchorage all along the N. coast in the neighbourhood of the Bocas and off the North Post Signal Station, in 22 to 30 fathoms. Vessels drawing 10 ft. can come alongside the quay and vessels drawing 15 ft. alongside the jetty. Tides rise and fall $3\frac{1}{2}$ ft. There are four cranes, the largest to lift 15 tons. There are three passages through the Serpent's Mouth (on the S. coast): the east, close to Icaos Point; the middle; and the west, by the Padernal River. The middle is recommended, and the western passage is the most dangerous. Asphalt can be procured in any quantity from the Pitch Lake at La Brea, where a jetty has been erected, with an overhead wire transporting tramway, by which the asphalt is brought from the lake and tipped direct into the holds of vessels moored alongside.

There is anchorage from 5 to 8 fathoms, good holding ground, along the whole of the south coast, at about $1\frac{1}{2}$ miles distant, and no danger has been found further from the coast than $\frac{1}{2}$ a mile, except the Despatch Reef, in Erin Bay, having 6 ft. on it, and the middle bank, in Guayaguayara Bay. Anchorage will be found in Guayaguayara Bay, $1\frac{1}{4}$ miles from Galeoto Head, bearing E.N.E., good holding ground, in $4\frac{1}{2}$ fathoms. Anchorage will be found in Erin Bay, 2 miles west of Erin Point, in 5 fathoms, stiff mud. The marks for the Despatch Reef are Quoin Cliff (a red cliff like a gun quoin), on with Erin Hill (the highest land seen), N.E. by E., which leads on the shoal, distant from the nearest shore about $1\frac{3}{4}$ miles. Anchorage will be found off Moruga, at about 1 mile from the shore, in 5 fathoms; but the landing for boats is generally bad.

West Indies (British)—Port of Spain (Trinidad) (continued).

There is a good channel, carrying 25 ft. at low water outside the Wolf Rock, passage to the eastward of the Black Can Buoy, and to the westward of the Demerara Shoal, which is marked on the E. edge by a conical beacon buoy (red).

There is a 3-fathom patch $\frac{3}{4}$ of a mile E.N.E. (true) from the outward Barrel of Beef Buoy, and a 6 ft. ledge midway between the buoys. The outer Barrel of Beef Buoy has been shifted $\frac{3}{4}$ of a mile to the north, and is in 4 fathoms of water. A buoy has been placed on Bailie Shoal, in 3 fathoms water, off the Great Oropouche Lake; mariners are recommended not to go to the southward of this buoy. A buoy has been placed on the 9 ft. patch, to the west of Farallon Rock, San Fernando.

There is a $2\frac{1}{2}$ fathom patch due west from San Fernando, about $5\frac{1}{2}$ miles; and also N.E. of that patch, a $2\frac{2}{3}$ patch W. by N., $\frac{1}{2}$ N. (true), 4 miles from Farallon Rock, midway to La Brea, and in the fairway between those places.

There is a floating dock, 365 ft. long, 56 ft. wide at the entrance, and with a lifting power of 4,000 tons. There is a Government patent slip to lift 400 to 500 tons.

Time Signals.—Chronometers can be checked. A ball is dropped at the Observatory Tower at noon Port of Spain mean time, equal to 4 h. 6 m. 2.5 s. Greenwich mean time. The signal is of no value.

Pilotage.—Not compulsory. The pilotage limits are 1 mile from outside the Gulf of Paria from the coasts of Trinidad and Tobago. Rates for sailing vessels:—

To or from outside of Bocas and Port of Spain or San Fernando	4 c. per reg. ton.
„ inside of Bocas	2 „ „
„ outside of Bocas and La Brea or Brighton	5 „ „
„ inside of Bocas	3 „ „
„ Serpent's Mouth (Icacos) and Port of Spain or San Fernando	6 „ „
„ Port of Spain and Mayaro or intermediate places, viz.:—	
From Port of Spain to Matura, Toco, Manzanilla, Guayaguayara, Moruga, and Erin	8 „ „
„ „ to Icacos	$2\frac{1}{2}$ „ „
„ „ to La Brea	2 „ „
„ „ to San Fernando or any place this side of La Brea	$1\frac{1}{2}$ „ „
„ „ to Scarborough (Tobago)	8 „ „

Steamers pay one-quarter the above rate. Should a pilot be engaged outside the pilotage limits, a charge of an additional 1 c. per reg. ton is made.

Port Charges.—Harbour Dues:—Vessels over 60 tons, 4*d.* per ton; minimum, 20*s.* Arriving in ballast to charge on cargo shipped. Vessels of 10 to 60 tons pay a commuted fee on inward and outward cargo at time of entry, as follows: 10 to 20 tons, 6*s.*; 21 to 30 tons, 8*s.*; 31 to 40 tons, 10*s.*; 41 to 50 tons, 12*s.*; 51 to 60 tons, 16*s.* **Jetty and Quay Dues:**—Vessels under 10 tons net reg. are exempt from dues, but all other vessels lying at the quay and jetty pay as follow:—

	£	s.	d.
For vessels of 60 tons reg. (net) and upwards, for each ton loaded or discharged	0	1	0
For vessels of 10 tons, and not exceeding 60 tons net reg., a commuted charge, to include discharge and loading, as follows:—			
Over 10 tons and not exceeding 20 tons	0	12	0
Over 20 „ „ 30 „	0	16	0
Over 30 „ „ 40 „	1	0	0
Over 40 „ „ 50 „	1	10	0
Over 50 „ „ and under 60 „	2	0	0

The above charges are exclusive of harbour dues.

West Indies (British)—Port of Spain (Trinidad) (continued).

Harbour Improvement Dues.—4*d.* per ton on cargo landed.

Lay-days.—For vessels under 60 tons to discharge and load cargo is as follows :—

Vessels under 40 tons net reg. 4 days.

Vessels between 40 and 60 tons net 6 "

For each day the jetty or quays are occupied beyond these periods a further charge of one-third the amount payable under the above scale will be exacted.

In the case of vessels over 60 tons net reg. the rate of discharge is to be :—

Over 60 tons and not exceeding 100 tons net reg. 20 tons per day.

.. 100 " " 200 " " 30 "

.. 200 " " 500 " " 40 "

.. 500 " net register 50 "

And in default thereof, for each day the vessel occupies the jetty or quay a charge of 1*s.* per ton at the above rate of discharge will be payable.

Discharging :—General cargo, 60 c. per ton ; loose coal, 60 c. per ton landed ; rice, 5 c. per bag ; flour and other bread-stuffs, 3 c. per barrel.

Stowage :—Sugar, 20 c. per hhd. ; 2 c. per bag ; molasses, 12 c. per puncheon. **Bills of Health :**—5*s.* **Ballast :**—Stone ballast, 1 dol. 20 c. to 1 dol. 80 c. per ton ; sand ballast, 40 c. to 50 c. per ton. **Water :**—At quay, 24 c. per puncheon of 100 gallons ; alongside ship, 70 c. **Labour :**—On board, 1 dol. 20 c. per day. **Lighterage :**—Lighters, 3 dols. per day. Loading sugar, 60 c. to 65 c. per hhd. ; per bag, 6 c. ; molasses, 40 c. per puncheon.

Pro Forma Charges on a steamer of 1,000 tons net reg., with a general cargo in and sugar out :—

	£	s.	d.
Harbour dues at 4 <i>d.</i> per ton	16	13	4
Discharging 2,000 tons at 2 <i>s.</i> 6 <i>d.</i>	250	0	0
Boat hire	3	2	6
Bill of health	0	5	0
Tally clerk, 5 days	2	1	8
Water, 1,000 gallons	1	10	0
Stevedore, loading 2,000 hhds. of sugar at 2 <i>s.</i> 6 <i>d.</i>	250	0	0
	<u>£523</u>	<u>12</u>	<u>6</u>

SCARBOROUGH (Tobago).

Scarborough, in lat. 11°12' N., long. 60°43' W., is the chief town of the Island of Tobago, and the only port of entry.

Population.—2,580.

Imports.—Plantation stores, American provisions, hardware, and textile manufactures.

Exports.—Sugar, molasses, rum, cocoa, coffee, cocoanuts, etc.

Accommodation.—Steamers and merchant vessels anchor off the town in about 9 to 10 fathoms. The anchorage is good and sheltered from all but southerly winds, which rarely blow. Climate healthy. The anchorage in Great Courland Bay is in 5 to 7 fathoms, sandy bottom, about $\frac{1}{2}$ a mile off the town of Plymouth. It is rather exposed, but the holding ground is good. The anchorage in Little Courland Bay is in 7 to 9 fathoms, sandy bottom, and better shelter than in Great Courland Bay. Man-o'-war Bay forms a good harbour about 500 acres in extent. The depth at the anchorage is from 12 to 15 fathoms. There are no docks. No ballast is allowed to be thrown overboard in the anchorage ground.

West Indies (British)—Scarborough (Tobago) (continued).

Port Charges.—There are no dues of any kind, the port being absolutely free. **Stevedores** :—4s. per day ; 8d. per hhd ; 5d. per tierce ; and 1½d. or 2d. per barrel. **Labourers** :—2s. 6d. per day.

WINDWARD ISLANDS.

The Windward Islands (British) form the eastern barrier to the Caribbean Sea between Martinique and Trinidad. The group consists of the Islands of St. Lucia, St. Vincent, Grenada, and the Grenadines, half of the last named belonging to St. Vincent and the other half to Grenada. They have a total area of slightly over 500 square miles, and an estimated population of about 167,000, of whom 95 per cent. are negroes. Each island has its own institutions ; there being no common legislature, laws, revenue, or tariff. The trade of the colony amounts to over one million pounds sterling per annum, being made up as under :—

ST. LUCIA.—	Imports, £310,309.
	Exports, £122,020.
ST. VINCENT.—	Imports, £ 96,554.
	Exports, £ 94,265.
GRENADA.—	Imports, £282,708.
	Exports, £417,099.
	<hr/> £1,322,955

Not including re-exports, £154,999.

Port Castries, in St. Lucia, appears to do the most considerable coaling business in the West Indies, the exports during 1907 being 118,503 tons, valued at £142,381.

Gold, American and British, notes of the Colonial Bank, and British silver and copper constitute the currency of the islands.

CHOISEUL (St. Lucia).

Choiseul is in lat. 13°48' N., long. 61°1' W.

Accommodation.—Vessels anchor within a quarter of a mile of the town. If anchored far out, they roll so much that it is impossible to take in cargo. Currents are greatly felt here, particularly at the full moon.

GRENVILLE (Grenada Island).

Grenville, or Labaye, in lat. 12°5' N., long. 61°37' W., is on the E. side of Grenada Island.

Accommodation.—Grenville is protected by a large coral reef with a narrow and difficult passage through it. Inside, the water is quite calm. There is a jetty at which vessels can load or discharge cargoes.

Pilotage.—Vessels not exceeding 60 tons, £1. Over 60 tons and not exceeding 100 tons, £1 10s. Over 100 tons and not exceeding 200 tons, £2. Over 200 tons and not exceeding 300 tons, £3. Vessels upwards of 300 tons, £4. These rates are for pilotage in and out.

Water.—1s. per 100 gallons or fractional part.

West Indies (British).

KINGSTOWN (St. Vincent).

Kingstown, the capital of St. Vincent, in lat. $13^{\circ}12' N.$, long. $61^{\circ}15' W.$, is situated at the head of Kingstown Bay, on the S.W. coast of the island.

Population.—Of the island, 51,780.

Exports.—Cotton, sugar, and arrowroot.

Accommodation.—The water is deep all over the bay, and there is 18 to 20 fathoms about a quarter of a mile from the town. The anchorage is good and there is no bar. There is a private wharf on which is a 5 ton crane. Elsewhere, loading and discharging is done from the beach.

Pilotage.—Not compulsory. Sailing vessels—10s. for the first 100 tons, and 1d. per ton after. Steamers—Vessels drawing up to 8 ft. £2; over 8 ft. and under 14 ft., £3 10s. For every foot or fraction of a foot over 14 ft., 6d. **Removals** :—From Kingstown to any out-bay, or from one out-bay to another, half the above rates.

Port Charges.—Tonnage Dues :—36 c. per net reg. ton, with the option that a vessel may unload and take in part cargo on payment of 36 c. per ton on cargo discharged or loaded. **Harbour Dues** :—Vessels under 20 tons, 4s. Steamers over 20 tons, £2. Sailing vessels over 20 tons, £1 10s. **Lighterage** :—From 60 to 80 c. per ton, according to cargo. **Stevedores** :—Stowage, 8d. per hhd.; 6d. per tierce; 2d. per barrel. **Labour** :—1 dol. per day, or 6d. per hour.

Georgetown on the E. and **Chateaubellair** on the W. coast are also ports of entry.

PORT CASTRIES (St. Lucia).

Port Castries, in lat. $14^{\circ}1' N.$, long. $61^{\circ}0' W.$, is on the N. coast of St. Lucia, and is one of the safest harbours in the West Indies. The usual loading ports are Castries, Roseau, Soufrière, Choiseul, and Vieuxfort.

Population.—About 7,758.

Imports.—Coal, codfish, cotton, linens, and bread-stuffs.

Exports.—Logwood, cocoa, rum, sugar, fruit, and cocoanuts.

Accommodation.—There are two wharves: Central Wharf, which is 300 ft. long and has a depth of 16 ft. at low water, and Northern Wharf, 640 ft. long and having a depth of 27 ft. at low water. The distance from the entrance of the harbour to the wharves is about a mile. There is steam communication with the customary loading ports and all the leeward coast. Vessels can only effect temporary repairs here, and generally proceed to Martinique for dry docking, if required.

Time Signals.—Chronometers can be checked. A ball is hoisted halfway up a mast at Harbour Master's Office at 11 h. 55 m. a.m., close up at 11 h. 58 m. a.m., and dropped at noon Castries mean time, equal to 4 h. 4 m. 0 s. Greenwich mean time. This signal is unreliable.

Pilotage.—Not compulsory. Steamers—In or out of harbour between 5 a.m. and 7 p.m., £1; between 7 p.m. and 10 p.m., £1 10s.; between 10 p.m. and 5 a.m., £2. Sailing vessels—between 5 a.m. and 7 p.m., vessels not exceeding 50 tons, 4s.; not exceeding 100 tons, 8s.; not exceeding 200 tons, 12s.; and exceeding 200 tons, £1. **Removals** :—Moving

West Indies (British)—Port Castries (St. Lucia) (continued).

in harbour, 5s. during the day, and 10s. at night. For lighting harbour beacons at night, for vessels not taking a pilot, a charge of 10s. is made.

Port Charges.—Clearance Fees :—4s. **Harbour Dues :—**Vessels carrying coal pay 1s. 3d. per reg. ton, plus 6d. per ton port dues on the quantity of coal landed, that is if leaving the island in ballast. **Wharfage Dues :—**Vessels loading or unloading one-fourth their cargo, 3d. per ton; one-half, 6d.; three-fourths, 9d.; and whole cargo, 1s. per ton per voyage. All vessels loading at any port in the island return to Port Castries to clear out at the Custom House. **Stowage :—**Per hhd., 8d.; per tierce, 4d.; per barrel, 1½d.; molasses, per puncheon, 8d. **Stevedores :—**3s. per day. **Lay-days :—**Vessels, in chartering for this island, should count lay-days from the date of entering, as loading frequently takes place at two or three different ports, causing much delay. **Water :—**Fresh water can be obtained at 1s. 6d. per 100 gallons. *Note.*—Steamers calling for coal or orders pay no port charges.

Pro Forma Charges on a steamer of 1,933 tons net reg., discharging 3,992 tons of coal at Port Castries, and leaving in ballast for the United States :—

	£	s.	d.
Harbour dues	220	12	3
Pilotage, in and out	2	10	0
Clearance fee	0	4	0
Running lines	0	4	0
American bill of health	1	0	10
Butcher's bill for 8 days in port	10	3	6
Fresh water, 2,500 gallons	1	17	6
Discharging cargo (stevedores)	199	12	0
Agent's commission, doing ship's business	5	5	0
Telegrams on arrival and departure	1	16	8
Custom House officer's fee	0	5	0

£443 10 9

ST. GEORGE (Grenada I.).

St. George, in lat. 12°3' N., long. 61°45' W., is on the W. coast.

Exports.—Cocoa, spices, cotton, and a little coffee.

Accommodation.—St. George possesses an excellent harbour, capable of accommodating the largest vessels. A heavy ground swell sets in from November to March, but the harbour is land-locked and safe from all winds. Vessels can heave down and refit. There is a private wharf where steamers drawing 22 ft. can come alongside. The Government wharf is 200 ft. long, but can only be reached by vessels drawing 8 ft. There is a crane on this wharf to lift 3 to 4 tons.

Pilotage.—Vessels of 50 to 200 tons, 15s.; 201 to 400 tons, £1 1s.; 401 tons and upwards, £1 10s.

Port Charges.—There are no harbour dues, the port being free.

Water :—1s. per 100 gallons. **Towage** can be had occasionally from £3 to £5. Provisions can be had at reasonable prices.

SOUFRIÈRE (St. Lucia).

Soufrière Bay, in lat. 13°52' N., long. 61°1' W., is at the S.W. end of St. Lucia.

Population.—About 3,000.

Accommodation.—The bay is sheltered from S.S.W. round

West Indies (*British*)—Soufrière (St. Lucia) (*continued*).

by E. to W.N.W., and there is 3 fathoms of water not 10 yds. from the beach, and 30 fathoms a cable-length off. Vessels lie moored with anchor ahead, and stern made fast with warps to trees on shore. In working in it is advisable to keep well in mid-channel, as a current of $1\frac{1}{2}$ knots runs close along shore. After the middle of July it is not prudent to remain here on account of W. winds.

Pilotage.—The stevedore employed by the vessel acts as pilot, and points out the anchorage ground.

Port Charges.—Tonnage Dues are only paid once. Payment is made at Castries, where vessels must enter and clear. Stowing and labour are the only charges at Soufrière.

Gros Islet Bay, 5 miles N.N.E. of Port Castries, has good anchorage in 4 to 5 fathoms, about $\frac{1}{2}$ a mile off shore.

VIEUXFORT (St. Lucia).

Vieuxfort, in lat. $13^{\circ}47'$ N., long. $60^{\circ}59'$ W., is on the extreme S. of St. Lucia.

Accommodation.—The port is safe, with smooth water. Care should be taken on entering it, as a reef extends some distance out to the N.W. of the town.

WEST INDIES (DANISH).

Although small, the islands of St. Croix, St. Thomas, and St. John, which make up the Danish possessions in American waters, are of some considerable importance to shipowners and masters, inasmuch as St. Thomas is a port of call for steamers and the entrepôt for the products of the surrounding islands. The total area only amounts to about 140 square miles, and the population to a little over 30,000, while the direct trade amounts to not more than about £28,000. In addition to this direct trade, however, a considerable amount of "in transit" or re-export is done through the ports of Charlotte Amalie and Christiansted.

Accounts are kept in dollars and cents; 1 dol.=4s. The legal weights and measures are the same as those in use in Denmark; but save at the Custom House, and in transactions with the Government, English weights (about 10 per cent. lighter) and measures are usually employed in wholesale, and invariably in retail, trade.

CHARLOTTE AMALIE (St. Thomas).

Charlotte Amalie, in lat. 18°21' N., long. 65°0' W., is the capital of the Island of St. Thomas, and the only commercial port of entry.

Population.—About 10,000.

Imports.—General merchandise.

Export.—Rum.

Accommodation.—The harbour, which is situated in about the middle of the S. side of the island, is the largest and deepest port of call in the West Indies. Its entrance at the narrowest part is about $\frac{1}{4}$ of a mile wide, from whence it spreads out on either side into the basin, about $\frac{3}{4}$ of a mile in diameter, and it is at all times easy of ingress and egress. The harbour is completely protected, and vessels drawing up to 32 ft. can lie alongside the wharves in safety, even in the hurricane months. The greatest depth in the entrance is 33 ft., at the coal wharves 28 ft., and at the inside wharves 42 ft. The total quayage is 1,000 ft. There is a crane to lift 20 tons. To the W. of the harbour there is a floating iron dock, 250 ft. long over all, 70 ft. wide at the entrance, 20 ft. on the sill, and with a lifting power of 3,000 tons. This dock can take a vessel 290 ft. long over all and 275 ft. on the keel. Patent slip will take a vessel of 400 tons drawing not more than $7\frac{1}{2}$ ft. of water.

The Royal Mail Steam Factory at the W. end of the town has first-class means of repairing steamers requiring to refit, and there are also shipwright yards where a large supply of spars, etc., is kept on hand to accommodate vessels arriving in distress.

West Indies (Danish)—Charlotte Amalie (St. Thomas) (contd.).

Pilotage.—Not compulsory. **Steamers :**—To or from the harbour :—

Draught.	Day.		Night.	
	Fr.	Bit.	Fr.	Bit.
12 ft. inclusive	20	00	30	00
From 12 to 16 ft.	25	00	40	00
„ 16 to 24 ft.	40	00	60	00
Above 24 ft.	60	00	80	00

Sailing Vessels :—

Draught.	TO THE HARBOUR.		FROM THE HARBOUR.	
	From Sunrise to Sunset.	From Sunset to Sunrise.	From Sunrise to Sunset.	From Sunset to Sunrise.
	Fr. Bit.	Fr. Bit.	Fr. Bit.	Fr. Bit.
10 ft. inclusive	10 00	15 00	10 00	15 00
From 10 to 12 feet	15 00	22 50	10 00	15 00
„ 12 „ 14 „	20 00	30 00	15 00	20 00
„ 14 „ 16 „	25 00	37 50	17 50	25 00
„ 16 „ 18 „	30 00	45 00	20 00	30 00
„ 18 „ 20 „	35 00	52 50	25 00	35 00
„ 20 „ 22 „	40 00	60 00	30 00	40 00
„ 22 „ 24 „	50 00	75 00	35 00	50 00
Above 24 ft.	75 00	120 00	50 00	75 00

Port Charges.—Charlotte Amalie is a free port. No port charges on steamers or sailing vessels in ballast, seeking, with cargoes trying the market, or steamers calling for fumigation or bunker coal. Other vessels discharging or loading entire general cargo, pay 2 fr. 50 c. per reg. ton. If loading or discharging only portion of general cargo, 2 fr. 50 c. per ton of cargo discharged or loaded. Vessels with coal only pay 1 fr. 60 c. per reg. ton. Vessels loading coal from the shore or from another sailing vessel pay no ship dues on the coal. Vessels arriving here in distress are free of all Custom House charges, provided they are not condemned. **Dock Charges :**—Ships of 1,000 tons gross, and upwards, 75 c. for the first day ; 25 c. for each of the next 5 days, and 20 c. for each subsequent day. For ships under 1,000 tons gross, 70 c. for the first day ; 25 c. for each of the next 5 days, and 20 c. for each subsequent day. **Warping :**—In the harbour, the same charge as piloting from the harbour. **Mooring :**—Half the amount fixed for warping, with a minimum charge of 10 fr. **Hospital Charges :**—10 fr. (2 dols.) per day, including doctor. **Doctor's Fee :**—If no contract or agreement is made, 15 fr. (3 dols.) per visit. **Ballast :**—Stone, 1 dol. per ton of 2,240 lb., free alongside.

Pro Forma Charges on a steamer of 1,979 tons net reg., from Norfolk, Va., with 4,360 tons of coal :—

	Dols. c.
Pilotage inwards, 23 ft.	12 00
Doctor's visit	3 00
Tonnage dues at 32 c. per ton	633 28
Stevedore, discharging 4,360 tons at 25 c.	1,090 00
Pilotage outwards, 12 ft.	5 00

1,743 28 = £348 13s. 2d.

West Indies (Danish).**CHRISTIANSTED (St. Croix).**

Christiansted, in lat. $17^{\circ}40'$ N., long. $64^{\circ}46'$ W., is situated on a deep bay on the N. side of the Island of St. Croix.

Population.—About 6,000.

Imports.—Flour, corn meal, beef, pork, lard, lumber, agricultural implements, and coal.

Exports.—Sugar, rum, and cotton.

Accommodation.—The harbour has a depth of water varying from 4 to 12 fathoms, and is, under ordinary circumstances, safe for vessels drawing up to 17 ft. The harbour is formed by a coral reef, running E. and W., at a distance of about 1 mile from the town, the entrance to it varying from $2\frac{1}{2}$ to 9 fathoms. The passage is narrow and rather intricate, more especially with the wind from S.W., or varying from S. to N.W. There is good anchorage off the port. Dangerous shoals lie off the S. side of the island, the high land inland giving the appearance of the shore being at some distance, when the low land is dangerously close.

Pilotage.—Vessels calling in search of a market, and leaving within 24 hours without breaking bulk, are exempted from payment of compulsory pilotage. Compulsory for vessels over 20 tons, but, if the pilot is not employed, only half the amount is charged. American and Danish vessels, 1 dol. (or 5 fr.) per foot. For vessels of all other nationalities, 1.25 dols. (or 6.25 fr.).

Port Charges.—Tonnage Dues:—30 c. per commercial last (=2 tons), loaded or discharged, with a maximum of one half of the net reg. tonnage of the vessel. (Vessels having paid the maximum can discharge or load at either port without further payment.) If loading or discharging one-quarter to half the cargo, 20 c. per commercial last; loading or discharging one-quarter the cargo, 15 c. per commercial last. Tonnage dues are paid on entering and leaving the port, but vessels not loading or discharging cargo are exempt from these dues.

Harbour Improvement Rate:—In addition to ordinary tonnage dues, vessels loading or discharging at Christiansted pay an extra 5 c. per reg. ton for harbour improvements and upkeep, the Government granting the same reduction, viz., charges to be calculated on half the reg. tonnage on all regular line steamers and others applying for the privilege. **Warping:**—Ships, £1 12s.; brigs, £1 4s.; schooners, 16s. **Lighters:**—3 dols. per day. **Quarantine Fee:**—Vessels over 100 tons, 5 dols., and under 100 tons, 3 dols. **Shipbroker:**—It is customary for the consignee to enter the vessel, for which no charge is made. **Craneage:**—Only levied when crane is used for heavy goods which cannot be landed or loaded otherwise. The crane dues on a vessel of 141 tons reg. were 23 dols. 84 c. These dues are paid by consignee, but, as the old law puts them on the vessel, it should be stipulated in the charter-party. **Water:**— $\frac{1}{2}$ c. per gallon from the bridge at the quay. **Ballast:**—Sand, 60 c. per ton. A vessel entering and leaving in ballast only pays pilotage.

Pro Forma Charges on a British vessel of 100 tons, with cargo, drawing 12 ft :—

	Inward. Dols. c.	Outward. Dols. c.
Anchorage	15 00	15 00
Pilotage	15 00	15 00
Carried forward	30 00	30 00

West Indies (Danish)—Christiansted (St. Croix) (*continued*).

	Inward.		Outward.	
	Dols.	c.	Dols.	c.
Brought forward	30	00	30	00
Warping.	—	—	6	00
Bill of health	—	—	2	50
Fee to health officer	5	00	—	—
Harbour regulations	0	25	—	—
Brokerage (optional)	7	62	7	62
Harbour improvement tax	2	50	2	50
	45	37	+ 48	62
	= £18 16s. 0d.			

FREDERIKSTED (St. Croix).

Frederiksted, in lat. 17°38' N., long. 64°55' W., is situated on the W. coast of the Island of St. Croix.

Population.—2,800.

Imports and Exports.—See **Christiansted**.

Accommodation.—Frederiksted is an open roadstead, with good anchorage for large vessels $\frac{1}{4}$ mile from the shore. The depth of water close under the land varies from 4 to 12 fathoms. There is a wharf for lighters 100 ft. long with a crane to lift 7 to 10 tons.

Pilotage.—None.

Port Charges.—Tonnage Dues :—30 c. per commercial last (=2 tons) loaded or discharged, with a maximum of one-half of the net reg. tonnage of the vessel. (Vessels having paid the maximum can discharge or load at either port without further payment.) If loading or discharging one-quarter to half the cargo, 20 c. per commercial last ; loading or discharging one-quarter the cargo, 15 c. per commercial last. Tonnage dues are paid on entering and leaving the port, but vessels not loading or discharging cargo are exempt from these dues. Vessels entering or leaving in ballast only pay quarantine dues. (See **Christiansted**.) **Wharfage** :—Salt or coal, 25 c. per ton of cargo. Lumber, 10 c. per 1,000 sq. ft. Barrels, packages, etc., according to size, 2 to 10 c.

WEST INDIES (DUTCH).

The colony of Curaçao embraces the two groups of islands consisting of St. Eustache and Saba, lying to the north of the coast of Mexico, the southern part of the island of St. Martin, and the islands of Curaçao, Bonaire, and Aruba. It has a total area of 403 square miles, with a population of a little over 52,000 divided as under :—

Island.	Sq. miles.	Population.
Curaçao	210	31,090
Bonaire	95	6,063
Aruba	69	9,541
¹ St. Martin	17	3,087
St. Eustache	7	1,499
Saba	5	2,186

¹ Part island.

The colony is governed by a governor appointed directly by the sovereign of the Netherlands. The total trade of the islands is of an annual value of £350,000, the latest returns showing the imports valued at £785,480, and the exports at £481,965. The chief products are maize, beans, cattle, salt, and phosphate of lime. The currency and weights and measures are the same as those used in Holland.

Willemstad, the chief town, is situated on the island of Curaçao. It is also the seat of Government, and is built on the E. side of the canal formed by St. Anna Bay.

Population.—30,000.

Imports.—Coal, lumber, cordage, petroleum, provisions, woollens, cottons, and fancy goods.

Exports.—Salt, phosphate of lime, goat-skins, orange peel, dividivi, aloes, and straw hats.

Accommodation.—Curaçao possesses a safe and commodious harbour, and St. Anna Bay, in lat. 12°6' N., long. 68°56' W., is capable of receiving the largest vessels, which may load and unload alongside the town quays, where there are spacious warehouses. There is a pontoon bridge across the harbour, not far from the entrance, and care should be taken that the harbour should only be entered when the signals have been given that the bridge is open. Vessels from the N. should, after passing Little Curaçao, run to the W. until abreast of Santa Barbara, or Tafelberg, with their heads to the S.E., in order to avoid the eddy current at a place known as Hala Canoa.

Time Signals.—Chronometers can be checked. A flag is hoisted on Fort Nassau 5 minutes before the signal and hauled down on the firing of the gun from the guardship at noon Curaçao mean time, equal to 4 h 35 m. 46·9 s. Greenwich mean time.

Pilotage.—Compulsory. Steamers—Of less than 400 tons gross measurement, 15 fl. Vessels over 400 tons and less than 800 tons, 27 fl.

West Indies (Dutch).

50 c. Over 800 tons and less than 1,800 tons, 32 fl. 50 c. Vessels of 1,800 tons and over, 37 fl. 50 c. Sailing vessels—Up to 66 cub. metres, 2 fl. 50 c. Vessels of 66 cub. metres and less than 133 cub. metres, 4 fl. Over 133 cub. metres and under 221 cub. metres, 5 fl. 50 c. Over 221 cub. metres and under 443 cub. metres, 7 fl. Over 443 cub. metres and under 886 cub. metres, 11 fls. 25 c. Vessels of 886 cub. metres gross measurement and upwards, 15 fl. **Removals** :—For a steamer or sailing vessel of less than 300 cub. metres, 10 fl. Vessels of over 300 cub. metres, 25 fl. From between half an hour after sunset and half an hour before sunrise, double pilotage rates are charged.

Port Charges.—On January 1, 1909, all port charges and navigation dues, with the exception of pilotage, were abolished in the islands of Curaçao.

Labour :—Labourers on board are paid 2 fl. per day ; a foreman 3 fl., and meals. Overtime during the day, 25 c. per hour ; at night, 40 c. per hour. Checkers on board receive from 3 fl. 50 c. to 5 fl. per day, according to the work done. Overtime and night work extra. Landing cargo, including discharging into lighters and workmen on shore for landing cargo, about 80 c. to 1 fl. 25 c. per ton measurement. Loading, from 1 fl. 75 c. to 2 fl. 50 c. per ton weight, according to quantity.

Pro Forma Charges on a steamer of 4,000 tons gross reg., discharging 1,000 tons of general merchandise in 4 days :—

	Fl.	c.
Pilotage in and out at 37 fl. 50 c. each way	75	00
Wharfage, 4 days at 60 fl. per day	240	00
Doctor's visit	1	00
Boat hire, 4 days at 5 fl.	20	00
Checkers attendance : 5 men 4 days each at 3 fl. 50 c. per day	70	00
Police	5	00
Bill of health to Columbia	7	50
" " America	6	25
Stevadores account, 1,000 tons at 1 fl.	1,000	00

1,424 75 = £118 14s. 7d.

LITTLE CURAÇAO.

Little Curaçao Island, in lat. 12°1' N., long. 69°48' W., lies about 5 miles S.E. of Curaçao proper. A lighthouse is erected upon this island, the two attendants being the only inhabitants. At present a kind of phosphate earth is exported in limited quantities, vessels entering and clearing at Curaçao.

ORANGE TOWN (St. Eustache).

Orange Town, in lat. 17°27' N., long. 63°0' W., is the only port on the Island of St. Eustache, and is situated on the W. coast.

Population.—Of the island, 1,260.

Exports.—Yams, hogs, sweet potatoes, and cotton.

Accommodation.—The only safe landing place is on the beach under the town, and, as the surf is very heavy, boats must be veered in from an anchor with a long scope of cable. The anchorage is in 10 fathoms on sand, 3½ cables from the shore. Water is scarce and dear.

West Indies (Dutch).**ORANJESTAD.**

Oranjestad, in lat. $12^{\circ}32'$ N., long. $70^{\circ}2'$ W., is situated upon the leeward side of Aruba Island.

Population.—Of the island, 9,700.

Imports.—Food-stuffs and general merchandise.

Exports.—Aloes, dividivi, goat-skins, etc., which are shipped to Curaçao in small local schooners and dispatched by steamers to Europe and the States.

Accommodation.—The harbour is formed by a coral reef which runs nearly the whole length of the leeward side of the island, from $\frac{1}{4}$ to $\frac{1}{2}$ a mile from the shore, forming for the entire length a calm lagoon, affording a safe and convenient anchorage for vessels of considerable size and draught. Vessels of 18 ft. draught can pass over the reef at all times.

Pilotage.—Not compulsory. If a pilot is employed the charge is three-quarters of the tariff as given for Willemstad.

Pro Forma Charges on a sailing vessel of 209 tons reg. (501 cub. metres), with ballast inwards and general cargo outwards:—

	Fl.	c.
Pilotage, in and out	16	86
200 gals. of water at $2\frac{1}{2}$ c. per gal.	5	00
Hire of one lighter, $1\frac{1}{2}$ days	11	25
Two men working ballast, $1\frac{1}{2}$ days	3	75
Stamps	2	25
	39	11 = £3 5s. 2d.

PHILIPSBURG (St. Martin).

Philipsburg, in lat. $18^{\circ}3'$ N., long. $63^{\circ}3'$ W., on Grande Bay, is the principal port in the Dutch portion of the Island of St. Martin.

Imports.—Provisions and general merchandise.

Exports.—Salt, cattle, sheep, horses, mules, tamarinds, and cotton.

Accommodation.—The anchorage is in 3 to 4 fathoms of water, about $\frac{1}{3}$ of a mile from the shore. Vessels of 11 ft. draught can approach within 3 cable-lengths.

Pilotage.—Not compulsory. If employed one half the tariff fixed for Willemstad.

Port Charges.—Stevedore:—Loading or discharging, 1 dol. 50 c. per day. **Ballast:**—40 c. per ton.

ST. NICHOLAS.

St. Nicholas, the harbour of the Aruba Phosphate Co., is situated about 2 miles S.W. of the point called Cerro Colorado, a point S.E. of Aruba Island.

Population.—Of the island, 9,000.

Export.—Phosphate.

Accommodation.—There is good accommodation for vessels of any size at high or low water. Vessels drawing more than 17 ft. of water cannot load at the wharf.

West Indies (Dutch)—St. Nicholas (*continued*).

Pilotage.—Compulsory. **Charges:**—Three-quarters of the tariff fixed for Willemstad. **Towage:**—Free outwards for vessels loaded with phosphate.

Port Charges.—**Boat Hire:**—Free for vessels loading phosphate. **Consular Fees:**—See **Boat Hire**. **Labour:**—Trimming, 5 c. per ton. Working ballast, 1 fl. 25 c. per man per day. **Lighterage:**—7 fl. 50 c. per day. **Water:**—2½ c. per gallon. **Entrance and Clearance Fees:**—Vessels loading phosphate are free from entrance and clearance fees.

Pro Forma Charges on a steamer of 893 tons reg. (2,527 cub. metres), loading 1,820 tons of phosphate, drawing 17 ft. loaded (loaded and dispatched in 6 days):—

	Fl.	c.
Pilotage and boat, in and out	56	25
Trimming of cargo	91	00
Telegram (4 words)	13	80
Extra to labourers working on Sunday	60	00
	221	05 = £18 8s. 5d.

Pro Forma Charges on a sailing vessel of 1,538 c.m. loading 960 tons of phosphate:—

	Fl.	c.
Pilot and boat, in and out	22	50
Lighter, 1 day at 5 fl.	5	00
Men working ballast, by contract	60	00
Towage from ballast ground	12	00
500 gals. of water at 2½ c. per gal.	12	50
Trimming 960 tons of cargo at 5 c.	48	00
Postage stamps	1	50
One telegram (3 words)	13	20
Smith's work	6	00
	180	70 = £15 1s. 2d.

WEST INDIES (FRENCH)

GADELOUPE AND ITS DEPENDENCIES.

The French islands of Guadeloupe, Basse Terre on the west, and Grand Terre on the east, with five dependencies consisting of the smaller islands, Marie Galante, Les Saintes, Desirade, St. Barthélemy, and St. Martin, have a total area of 688 square miles, with a population in 1906 of 190,273. The trade is of a value of upwards of one million pounds sterling, the imports in 1906 being returned at £554,682 and the exports at £618,260. The principal imports are : Coal, salt fish, flour, cement, tobacco, preserved provisions, dry goods, earthenware, hardware, fertilizers, rice, lumber, sugar bags, hoops, wine, beer, cheese, butter, soap, olive and kerosene oils, horses and cattle, galvanized roofing, matches, etc. Exports : Usine sugar, coffee, cocoa, logwood, rum, molasses, bananas, pine-apples, vanilla, and bay leaves. The sugar shipping season is from January to July, the crop in 1907 amounting to 35,000 tons.

Pilotage (which includes Harbour Dues).—Compulsory for vessels over 60 tons :—

										Fr.	c.
Up to	30 tons	.	.	.	.	.	.	.	.	10	00
31 "	60 "	.	.	.	.	.	.	.	.	30	00
61 "	80 "	.	.	.	.	.	.	.	.	60	00
81 "	100 "	.	.	.	.	.	.	.	.	78	75
101 "	150 "	.	.	.	.	.	.	.	.	118	12
151 "	200 "	.	.	.	.	.	.	.	.	144	37
201 "	250 "	.	.	.	.	.	.	.	.	170	62
251 "	300 "	.	.	.	.	.	.	.	.	196	87
301 "	350 "	.	.	.	.	.	.	.	.	223	12
351 "	500 "	.	.	.	.	.	.	.	.	249	57

Over 500 tons, 25 c. per reg. ton. Regular mail steamers pay 100 fr., whether loaded or in ballast. In the case of cargo boats (steamers), the pilotage fee shall be levied according to the number of tons of cargo landed or shipped, provided that such number of tons does not exceed the register tonnage of the vessel. A reduction of 25 per cent. is allowed off the tariff, but a ship in no case pays less than 100 fr. per voyage, whether arriving or sailing in ballast. Vessels at temporary anchorage, men-of-war, and yachts, free. No charge for shifting berths. Vessels paying pilotage at one port are free at the other ports of the colony.

GOVERNMENT INTERPRETER'S FEES AT ALL THE PORTS.

(Exempt if captain speaks French.)

		Per Vessel						Fr.
60 tons	register and under.	.	.	.	.	.	.	5
61 "	to 100	.	.	.	.	.	.	30
101 "	to 150	.	.	.	.	.	.	35
151 "	to 200	.	.	.	.	.	.	45
201 "	to 250	.	.	.	.	.	.	60
251 "	to 300	.	.	.	.	.	.	80
301 "	to 350	.	.	.	.	.	.	105
351 "	and above	.	.	.	.	.	.	135

West Indies (French)—Guadeloupe (continued).

SANITARY VISITS.

	Fr.	c.
100 tons or less	7	20
101 „ to 150	10	80
151 „ 200	14	40
201 „ and above	18	00

Buoy Tax.—Per ton, 48 c.; droghers per ton, 12 c.

Light Dues.—Per ton, 48 c.; droghers per ton, 12 c.

Water Dues.—500 tons and under, 25 c. per reg. ton; 501 tons and above, 12½ c. per reg. ton. Steamers and vessels at temporary anchorage pay 1 fr. per ton of water taken. Water dues are not paid by vessels which call for coal only.

OTHER DUES.

	Fr.	c.
Passport for vessels	7	20
Permit	6	00
Stamp and clearance	1	05
Skid hire, per day	5	00

Towage by row-boat, 20 fr. per boat and four hands.

Towage by steamer, 50 c. per reg. ton.

Steamers are subject to sanitary visits, buoy tax, and light dues, in proportion to the number of tons of cargo they land in the colony. They pay the full permit tax in every case where it is due. If they land no cargo they will be subject only to the minimum of the other taxes (sanitary visit, 7 fr. 20 c.; light dues, 12 c. per ton; buoyage, 12 c. per ton).

Vessels having paid their port charges in one of the ports of the island can proceed to any other port in the colony to discharge or load without any extra charge, interpreter's fees excepted.

Freights.—In view of the high premium paid at Guadeloupe for bills of exchange or gold, a shipmaster whose vessel is chartered for the island, should not fail to stipulate in the charter-party that the freight is to be settled by approved bill of exchange, or, if in francs, at the rate of 25 fr. 20 c. per £1, or 5 fr. 25 c. per 1 dol., plus the local bank's current rate of exchange. Also that advances for ship's disbursements while in port are to be made by consignee in gold, or its equivalent, at the local bank's current rate of exchange.

Currency.—The currency of the colony is the Bank of Guadeloupe notes, nickel tokens, and copper coins, all of which are legal tender. There is little or no gold or silver in circulation, but these can be had at the bank at 4 per cent. premium.

Means of Remittance.—By Bank of Guadeloupe drafts on London, Paris, or New York. The prevailing rate during 1908 was 90 days on Paris, 3 per cent.; 90 days on London, 3½ per cent.; 90 days on New York, 3¼ per cent.

Telegrams.—Messages to United States, east of Mississippi, 5 fr. 10 c. per word; west of Mississippi, 5 fr. 60 c. per word; to Canada, 5 fr. 35 c. per word; to Great Britain, Germany, France, Belgium, and Netherlands, 6 fr. 35 c. per word; to Norway and Denmark, 6 fr. 85 c. per word; to Sweden, 7 fr. 5 c. per word; to Italy, 6 fr. 70 c. per word.

(Note.—A premium of 4 per cent. is charged at present (1908) on the above rates if paid in local paper money. The premium is based on the local Government's rate for Post Office Orders.)

Full Manifest and Store List must be presented to Customs on arrival.

West Indies (French)—Guadeloupe (*continued*).

Lighterage, unless otherwise specified, by charter-party, is payable by the ship.

Sales are made at 3 months, 2 per cent. discount. Bond rent, 2 per cent. per annum. Trade allowance, 5 per cent. for splits on white pine and spruce lumber.

All the Consulates are at Pointe-à-Pitre.

BAIE DU CANAL.

Baie du Canal, in lat. $16^{\circ}25' N.$, long. $61^{\circ}30' W.$, is on the W. coast of Grande Terre, in the Grand Cul-de-Sac.

Import.—Coal.

Accommodation.—This is a good place for discharging. A pilot can be obtained off Port Louis, who will take the vessel to Baie du Canal, where they anchor in a good position for discharging. The coal is taken from alongside in lighters, which can also be hired for bringing ballast on board. Shipmasters must enter and clear at Pointe-à-Pitre.

Water is very scarce, but fish and vegetables are plentiful.

Daily communication with Pointe-à-Pitre, via Port Louis, by drogher.

For pilotage and interpreter's fees, see **Guadeloupe**.

BASSE TERRE.

Basse Terre, in lat. $16^{\circ}2' N.$, long. $61^{\circ}47' W.$, on the S.W. of Guadeloupe is the capital of the island, and a port of entry.

Population.—8,626.

Accommodation.—The anchorage is before the town, $1\frac{1}{2}$ cable lengths from the shore, in 26 fathoms; bottom sand and gravel, covering rock. There is a fixed red light in the centre of the town, visible 8 miles, and another on the wharf visible 2 miles. There are two public piers for lighters, 200 ft. long, each having four cranes to lift 4 tons. Fresh water, meat, and vegetables are expensive. Salt and fresh provisions of all kinds are abundant.

Telegraphic communication with Pointe-à-Pitre, America, Europe, etc. The Transatlantic Co.'s steamers call here, and there is a steamer twice a week to Pointe-à-Pitre.

Pilotage.—A pilot goes off to conduct vessels to their anchorage. For charges, see **Guadeloupe**.

Stone Ballast :—2 fr. to 3 fr. per ton. For other charges, see **Guadeloupe**.

GUSTAVIA (St. Barthélemy).

Gustavia, in lat. $17^{\circ}54' N.$, long. $62^{\circ}54' W.$, is the capital of St. Barthélemy, and is situated on the S.W. side of the island.

Population.—Of the island, 2,772.

Imports.—Hardware, dry goods, provisions, etc.

Exports.—Cattle, pine-apples, cotton, hats, and shell work.

Accommodation.—The harbour, called Le Carenege, is safe and commodious, but can only admit vessels of 16 ft. draught. Those of 17 ft. draught can anchor in the bay about 2 cable-lengths off the town. It is not considered safe during the hurricane season. Fresh water is scarce.

Port Charges.—A free port.

West Indies (French).

LE MOULE.

Le Moule, in lat. $16^{\circ}20'$ N., long. $61^{\circ}20'$ W., is on the N.E. coast of Guadeloupe.

Imports.—Coal, and occasionally lumber and cooperage.

Exports.—Usine sugar and rum.

Accommodation.—This is a reef harbour, small and fairly well sheltered, except during northerly winds, which generally prevail from December to March, when the port is considered dangerous. Freight and insurance are generally, in consequence, higher than to the neighbouring ports. There is room for nine vessels in the first tier, and five in the second tier. In the former, vessels have two Government mooring chains, and find two of their own; in the second tier they find all moorings. Government hawsers can be had in case of need, vessels paying a small sum for wear and tear. Vessels in the harbour are required to furnish a boat, four men, and a hawser on arrival and departure of each vessel, under a penalty of 100 fr. It is not prudent for vessels drawing more than 13 ft. to come here. There are no buoys. There is about 14 ft. of water in the channel of the Grande Passe, which cannot be entered without a pilot. During a swell, which sometimes lasts about 10 days, vessels are obliged to remain outside, and those ready for sea are frequently detained from the same cause. There are laid moorings on the reefs, to which vessels lie with four cables down. Vessels are moored in tiers, with 60 fathoms of chain fore and aft, and should be well found in good ground tackle. In going to sea the wind must be from E. or E.S.E. There is a white flagstaff, which can be seen on approaching the port, from which the following signals are made:—A red flag signifies that vessels have to keep at sea; a white flag with a red square in the middle, that the pilot is coming out; a white flag with a diagonal red cross, that vessels may enter.

A stage coach runs to Pointe-à-Pitre twice daily. There is a telephone to Pointe-à-Pitre and other parts of the island. Fresh water, meat, and vegetables are abundant.

Sand Ballast.—8 to 12 fr. per ton. For pilotage and interpreter's fees, see Guadeloupe.

MARIE GALANTE.

Marie Galante is in lat. $16^{\circ}0'$ N., long. $61^{\circ}14'$ W.

Export.—Sugar, which is droghered to Pointe-à-Pitre.

Accommodation.—The town of Grand Bourg is on the S.W. side of the island. It has a small reef harbour for vessels of barely 10 ft. draught, with two openings that carry 16 ft. St. Louis Bay, about 6 miles N.W., has a good anchorage in 4 to 7 fathoms. American whalers frequent the neighbourhood from December to April. There are sugar factories at Capesterre and about 2 miles N. of Grand Bourg, at which vessels occasionally discharge coal. Pointe-à-Pitre is the port of entry.

Steamship and telegraphic communication with Pointe-à-Pitre.

Water, meat, and vegetables are plentiful.

Port Charges.—**Wharf Tax.**—For vessels of 100 reg. tons, 10 fr.; up to 150 reg. tons, 15 fr.; up to 200 reg. tons, 20 fr.; over 200 reg. tons, 25 fr. **Stowage.**—70 c. per hogshead; 15 c. per barrel. Other charges, see Guadeloupe.

*West Indies (French).***MARIGOT (St. Martin).**

Marigot, in lat. $18^{\circ}4'$ N., long. $63^{\circ}5'$ W., is the chief settlement of the French in the Island of St. Martin, and is situated on the W. coast.

Accommodation.—The anchorage is excellent and well protected. About $\frac{1}{2}$ a mile from the town there is 19 ft. of water, which gradually decreases to 6 ft. close to the shore. Landing is inconvenient at all times on account of the numerous rocks and shoals.

Port Charges.—There are no port charges or any other fees for vessels entering this port.

Vessels must be provided with a Bill of Health, and must enter and clear. For charges, see **Guadeloupe**.

POINTE-À-PITRE.

Pointe-à-Pitre is in lat. $16^{\circ}13'$ N., long. $61^{\circ}30'$ W.

Population.—14,861.

Accommodation.—Pointe-à-Pitre is land-locked, and is one of the finest and safest harbours in the West Indies. There is excellent anchorage ground. It is well sheltered, and free from hurricanes. Tides rise about $1\frac{1}{4}$ ft. There is a depth of about 36 ft. in the channel, and vessels drawing 26 ft. may lie securely about two cable-lengths from the town. Vessels loaded with cargoes, and drawing less than 18 ft., can discharge at the quays. Outward cargoes are almost invariably lightered off. There is a coal depot here, with a stock of about 1,000 tons of Welsh coal. The coal wharf is 150 metres (491 ft.) long, with a depth alongside of 18 ft. Vessels can load alongside to 18 ft. and finish loading in the harbour in smooth water two cable-lengths away by lighters. Vessels always sail in and almost invariably tow out.

The Transatlantic Co.'s steamers call here regularly, and London and New York steamers frequently. Ordinary repairs can be executed. The nearest dry docks are at Fort de France (Martinique) and St. Thomas. Provisions of all kinds and fresh water are abundant. A telephone wire is laid to all parts of the island, and telegraph to Marie Galante.

Pilotage.—Pilots are always obtainable off Gosier Island lighthouse. For charges, see **Guadeloupe**.

Port Charges.—**Towage**:—Out by steamer, 50 c. per reg. ton; by rowing boat, 20 fr. per boat and four hands. **Lighterage**:—Bundles shooks, 20 c.; do. heads, 20 c.; mules and horses, 2 fr. 50 c.; rice, 2 fr. 50 c. per ton. 20 ton lighters, per day, 20 fr. Puncheon rum, 70 c.; cask annatto, 70 c.; bl. cocoa or coffee, 30 c. General cargo, 2 fr. 50 c. per ton; guano in bags, 2 fr. 50 c. per ton; iron, 2 fr. 50 c. per ton; coal, 2 fr. 50 c. per ton; sugar, 1 fr. 25 c. per hhd., 30 c. per barrel, 2 fr. 50 c. per ton bags. General cargo, night or Sunday, 2 fr. 50 c. Survey on hatches and stowage, 25 fr. **Discharging**:—General cargo, 1 fr. per ton, 10 c. per barrel. Guano in bags, 60 c. Coal, 1 fr. **Stowage**:—Per hhd., 50 c.; per barrel, 10 c.; bags, 8 c. **Dunnage Wood**:—12 to 14 fr. per cord. **Coal**:—35 fr. per ton (variable). **Ballast**:—Sand 3 fr. 50 c.; stone, 5 fr. per ton. Ballast must not be thrown overboard in the harbour. Sand and stones taken away from the ship at 1 fr. per ton. **Hospital Charges**:—Sailors, 6 fr. per day. **Labour**:—

West Indies (French)—Pointe-à-Pitre (*continued*).

5 fr. per day. (Cost of labour and ballast varies a little according to the season.) **Skid Hire** :—5 fr. per day. Other charges, see **Guadeloupe**.

Pro Forma Charges on a steamer of 2,519 reg. tons, landing 208 tons of cargo :—

	Fr.	c.
Interpreter's fees	135	00
Pilotage, in and out	127	96
Buoy dues	99	84
Light dues	99	84
Sanitary visit	18	00
Passport	7	20
Permit	6	00
Stamp	0	25
Clearance	2	80
	<hr/> 496	<hr/> 89 = £19 14s. 4d.

PORT LOUIS.

Port Louis is in lat. 16°28' N., long. 61°33' W.

Accommodation.—This is an open roadstead on the N.W. side of Grande Terre, in the Grand Cul-de-Sac. There are several factories in the neighbourhood, and a number of vessels discharge and load there each season. Discharging is sometimes a little delayed owing to the roughness of the water; but the port is considered safe. There is a Custom House here, but captains must proceed for entry and clearance to Pointe-à-Pitre, about 20 miles distant, with which there is daily communication by steamer.

Fresh water is scarce; fresh meat, fish, and vegetables can be obtained.

A telephone has been laid to different parts of the island.

Pilotage—Pilots can be obtained here for Baie du Canal. For pilotage and interpreter's fees, see **Guadeloupe**.

ST. FRANÇOIS.

St. François, in lat. 16°15' N., long. 61°16' W., is about 20 miles E. of Pointe-à-Pitre.

Accommodation.—St. François is a reef harbour on the south side of Grande Terre, only suitable for vessels drawing 12 ft. and under. Captains enter and clear at Pointe-à-Pitre. A stage coach runs to Pointe-à-Pitre daily. A telephone is laid to different parts of the island. Fresh water and meat are scarce. Fish, vegetables, and fruit are plentiful.

Pilotage.—There is a pilot stationed here. Shifting berth, 25 fr. each movement. For pilotage and other charges, see **Guadeloupe**.

STE. ANNE.

Ste. Anne, in lat. 16°15' N., long. 61°23' W., is about 12 miles E. of Pointe-à-Pitre.

Accommodation.—Ste. Anne is a reef harbour on the S. side of Grande Terre, available for vessels drawing not over 12 ft. There are three sugar manufactories in the neighbourhood; the port, though small, is safe. Captains go to Pointe-à-Pitre, with which place there is daily communication by stage coach, for entry and clearance.

Fresh meat is obtainable. Fish, vegetables, and fruit are abundant. A telephone is laid to different parts of the island.

Pilotage.—Pilots can be obtained off St. François. For charges see **Guadeloupe**. Shifting berth, 25 fr. each movement.

Port Charges.—See **Guadeloupe**.

*West Indies (French)***STE. MARIE.**

Ste. Marie, is in lat. 16°5' N., long. 61°35' W., opposite Pointe-à-Pitre.

Import.—Coal.

Export.—Sugar.

Accommodation.—This is a small but comparatively safe reef harbour, capable of holding three vessels of 13 to 14 ft. draught. Vessels enter and clear at Pointe-à-Pitre.

Pilotage.—Pilots are taken off Gosser Island. Although the Government pilotage is charged, no pilot is furnished, and masters have to pay a private pilot about 100 fr.

Port Charges.—**Sand Ballast** :—4 fr. per ton (delivered slowly). Stone, 4 fr. 50 c. to 5 fr. **Lighterage** :—2 fr. 50 c. per ton. For other charges, see **Guadeloupe**.

MARTINIQUE.

This island, which constitutes a French colony, has an area of 380 square miles, with a population estimated at 200,000. The total trade of the colony, which is mostly with France, is of an annual value of nearly 1½ millions, the imports being returned at £640,000, and the exports at £790,000. Sugar, coffee, cocoa, tobacco, rum, cotton, etc., are the chief products of the island.

The currency, weights and measures are the same as those in use in the French Republic. The Bank of Martinique, at Fort de France, affords banking facilities of every description.

Port Regulations.—Steam vessels landing only part cargo at ports in Martinique are charged only on the tonnage of cargo landed, with a minimum of 30 tons. **Dock Dues** :—Entry per ton, 2 fr. 50 c.; charge per day after dock has been emptied, for vessels from 300 to 2,000 tons 40 c. per ton reg., and 30 c. for every ton above 2,000 tons. Vessels under 300 tons pay a fixed entry charge of 250 fr., and a fixed charge per day of 200 fr.

Important to Shipmasters.—Most vessels bound for the sugar factories are chartered with coal direct; charters for return cargoes of sugar are mostly made at Fort de France, and a pilot is generally secured for these outports at Fort de France, and for Trinité, Galion, and Robert at Trinité for François and Vauclin at François, and for Marin and Trois Rivières at Fort de France for taking the vessel to the factory. Stevedores should be taken at Fort de France, as they cannot be procured at the works. The charge is as follows: 50 c. per hhd. of sugar, and 15 c. each for a barrel or bag.

The following information respecting the sugar factories should prove useful: The factories in the Bay of Fort de France, at all of which there is good anchorage, are Lamentin, Lareinty, Petit Bourg, and Rivière-Salé.

West Indies (French)—Martinique (*continued*).

The factories that ship from Trinité Bay are : Bassepointe, Lorrain, Vivé, St. Marie, and Bassignac. Usine Galion Factory ships from Galion Bay ; Customs entry at Trinité. Robert Factory ships in Robert Bay ; Customs entry at Trinité. François Factory ships at François ; and Vauclin Factory ships at Vauclin, with Customs entry at François. Marin Factory ships at Marin ; and Trois Rivières Factory ships at Trois Rivières, with Customs entry at Marin.

CUL-DE-SAC MARIN.

Cul-de-Sac Marin is in lat. $14^{\circ}30'$ N., long. $60^{\circ}55'$ W.

Accommodation.—This small inlet is about 2 miles deep, but narrow, and beset with numerous shoals, so that vessels of large draught must either steam, warp, or tow in. Small vessels can, however, work in without much difficulty, as the water is so clear that the numerous rocks and sandbanks can be easily seen and avoided. Vessels of 12 ft. draught can anchor about 5 cables from the town ; those of larger draught in 12 fathoms, about 1 mile off shore on good holding ground.

Pilotage.—A pilot is indispensable.

Port Charges.—See **Fort de France**. **Water** :—Water of fairly good quality may be obtained at the factory. **Provisions** :—Fresh meat may be obtained three times weekly, and mutton, goat, fish, and vegetables at all times.

FORT DE FRANCE.

Fort de France is in lat. $14^{\circ}38'$ N., long. $61^{\circ}4'$ W.

Population.—27,070.

Imports.—Flour, salt meat, codfish, corn, oils, butter, lumber, coal, cotton, linens, woollens, etc.

Exports.—Sugar, rum, cocoa, etc.

Accommodation.—Fort de France is a safe and secure harbour for large vessels. The anchorage has good holding ground on a soft bottom. There is a dry dock 414 ft. long over all, 82 ft. wide at the entrance at high water ordinary springs level, and $27\frac{3}{4}$ ft. on the sill at high water ordinary springs. Men-of-war and mail steamers have priority of admission to the dock except in the case of vessels having a leak and in real danger. There is a coal wharf, with 23 ft. of water alongside. Vessels are cleared here.

¹ **Pilotage.**—Compulsory :—

	Fr.
30 reg. tons and under	12
31 to 60 reg. tons	18
61 „ 100 „	43
101 „ 150 „	65
151 „ 200 „	82
201 „ 250 „	100
251 „ 300 „	118
301 „ 350 „	135
351 „ 500 „	153
Over 500 reg. tons, 153 fr. plus 25 c. per reg. ton or fraction thereof in excess.	

Port Charges.—**Stamp Duty** :—25 c. **Passport** :—6 fr. **Permit to Load and Discharge** :—5 fr. **Sanitary Dues** :—15 c. per reg. ton. ¹ **Light Dues** :

¹ An additional 10 per cent. is levied on pilotage and light dues.

West Indies (French)—Fort de France (*continued*).

—20 fr. per vessel irrespective of size. **Water Dues** :—200 tons and under, 30 fr. ; 201 tons to 300 tons, 45 fr. ; 301 tons and over, 60 fr. **Custom House Brokerage** (compulsory for masters who are not acquainted with the French language) :—20 tons and under, 10 fr. ; 21 to 40, 15 fr. ; 41 to 60, 20 fr. ; 61 to 80, 25 fr. ; 81 to 100, 30 fr. ; 101 to 150, 35 fr. ; 151 to 200, 40 fr. ; 201 to 300, 50 fr. ; 301 to 400, 60 fr. ; 401 to 500, 70 fr. ; 501 to 700, 80 fr. ; over 700, 80 fr. plus 5 fr. per 100 tons or fraction thereof in excess.

Steamers landing only part cargo pay port charges only on the tonnage of cargo landed, with a minimum of 30 tons. Steamers landing passengers as well pay an additional 1 fr. per passenger and additional port charges, each passenger being considered equivalent to 1 ton of cargo.

Dock Dues :—Entry, 2 fr. 50 c. per reg. ton. Charge per day after the dock has been emptied for vessels from 300 reg. tons to 2,000 reg. tons, 40 c. per reg. ton ; vessels of over 2,000 reg. tons, 30 c. per reg. ton. Vessels under 300 reg. tons pay a fixed entry charge of 250 fr. and a fixed charge per day of 200 fr. **Ballast** :—Sand, 2 fr. 50 c. per ton ; stone, 4 fr. per ton.

It is brought alongside in boats carrying from 2 to 4 tons. Sand ballast can be thrown overboard, but stone ballast must be sent on shore by lighters at a cost of about 1 fr. per ton. **Stevedores** :—Hogshead of sugar, 50 c. ; bag or barrel of sugar, 15 c. ; rum, 1 fr. per ton of 900 litres. **Lighterage** :—Sugar, hogshead, 1 fr. 20 c. ; barrel, 35 c. ; bag, 2 fr. 50 c. per 1,000 kilos. ; rum, 75 c. per cask. **Labourers** :—5 fr. per day. **Water** :—Supplied in tank lighters, at 3 fr. per ton, plus the cost of the tow-boat and labour employed in pumping the water on board the vessel. (Tow-boat, 20 fr.)

Fresh provisions can be procured here.

FRANÇOIS.

François is in lat. 14°37' N., long. 60°56' W.

Accommodation.—The anchorage is good and safe, but the entry to the port is difficult, and cannot be attempted safely without a pilot. Fresh provisions and fish are abundant, but beef can only be had three times a week. Sand ballast costs from 2 to 4 fr. per ton, delivered alongside. Water is fairly good, near the factory.

GALION BAY.

Galion Bay, in lat. 14°45' N., long. 60°55' W., is on the east coast of the island.

Accommodation.—The harbour is roomy, and vessels lie securely at anchor in plenty of water. It is very difficult of access, and should not be attempted without the aid of a pilot.

Sand ballast at from 2 to 4 fr. alongside. Stone can be bespoken at 5 fr. per ton, also alongside. Water fairly good. Provisions must be procured from Trinité, where the Customs entry is made.

GENIPA BAY.

Genipa Bay is situated in the Bay of Fort de France, 6 miles S.E. from Fort de France town.

Accommodation.—It is very difficult of access for the last

West Indies (French)—Genipa Bay (*continued*).

miles of the way, owing to the channel being so narrow, but it is all buoyed. The anchorage is about a $\frac{1}{4}$ of a mile from the beach, where the sugar refineries are. The depth of water varies from 36 ft. in some places to 18 ft. in others. It is a perfectly safe harbour, land-locked to all winds.

Vessels bound for Genipa Bay or Lamentin Bay must make for Fort de France, and enter at the Custom House there before proceeding. There is a little steamer plying twice a day between Genipa Bay and Fort de France, where all transactions take place.

Port Charges.—See **Fort de France**. **Ballast**:—3 fr. per ton (wet sand from the beach). **Water**:—Fresh water is obtained from a small rivulet close by.

PETITE ANSE DU DIAMANT.

This port is no longer of any interest to shippers.

ROBERT.

Robert, in lat. $14^{\circ}40' N.$, long. $60^{\circ}57' W.$, is on the east coast of the island.

Accommodation.—Robert is a large, commodious and safe port. The entrance requires a pilot; he resides at Trinité. Vessels coming to the factory have excellent anchorage at about 8 cables from the shore. Fairly good water can be obtained in the neighbourhood of the factory. Sand ballast costs from 2 to 4 fr., delivered alongside.

ST. PIERRE.

St. Pierre, in lat. $14^{\circ}47' N.$, long. $61^{\circ}10' W.$, was destroyed by volcanic eruption, May 8, 1902. No longer a port of entry.

SIMON.

This port is no longer of any interest to shippers.

TRINITÉ BAY.

Trinité is in lat. $14^{\circ}45' N.$, long. $61^{\circ}0' W.$

Population.—5,000.

Accommodation.—The bay is quite safe during ordinary winds, and has a good anchorage in 5 to 6 fathoms, about 6 cables from the town. After Fort de France, it is the most important commercial port in the island.

From whatever point a vessel may come she is guided in the course to be followed to enter the bay by a rock called Caravelle, which at a distance has the appearance of a ship under all sail. This rock, about 90 ft. above the sea level, is perfectly white at the summit, and quite destitute of vegetation. As it is to windward of the island, it forms an excellent guide to vessels from Europe bound to any of the ports on the eastern coast, which is rock-bound, and consequently dangerous. By night a fixed white light exhibited at Caracolli Point, about 5 kilometres (3 miles) south of this rock, serves the same purpose. Town water bad; good water is procurable at the Beaupré estate. Fresh provisions every day, fish and vegetables abundant.

West Indies (French).**TROIS RIVIÈRES.**

Trois Rivières, in lat. $14^{\circ}28'$ N., long. $60^{\circ}58'$ W., is situated in a small bay.

Accommodation.—A pilot is necessary to steer safely through the reefs that line the entrance on either side. A pilot can be had from Marin, the Customs port, distant by boat 6 miles. Water is scarce, but may be had at the factory. Sand ballast is procurable at varying rates. Provisions are scarce, but can be obtained at Rivière Pilote and Ste. Luce.

VAUCLIN.

Vauclin is in lat. $14^{\circ}32'$ N., long. $60^{\circ}50'$ W.

Accommodation.—This port is small, and the anchorage, which is about 8 cables from the shipping berth of the factory, is inferior to that of the other neighbouring ports, especially in the case of strong easterly breezes. The pilot resides at François, but vessels usually take one at Fort de France. Customs entry is at François.

Water is inferior and very scarce. Sand and stone ballast is abundant at varying rates. Provisions are scarce. Beef can be had only once or twice a week.

CUBA.

The island of Cuba is divided into six provinces : Camagüey, Havana, Matanzas, Pinar del Rio, Santa Clara, and Santiago de Cuba. It has a total area of 44,000 square miles, and an estimated population of over two millions.

Commerce.—The population is almost entirely engaged in agricultural pursuits, sugar and tobacco being the staple products. The Customs, which constitute almost the sole source of revenue to the Government, are high, totalling on an average £4,500,000=to 20 per cent. of the value of the goods imported.

A Treaty of Commerce and Navigation was signed (May 4, 1905) at Havana, between Cuba and Great Britain, providing for the extension to each other of the “ most favoured nation ” treatment. The total trade of the island is of an annual value of nearly forty-five million pounds sterling, of which about twenty-two millions represent imports and twenty-three millions exports.

During 1906 the tonnage entered at the ports of the Republic amounted to 13,463,932 tons.

Currency, Weights and Measures.—The Cubans have no currency and no paper money of their own. American gold is used and Spanish silver provides the fractional currency, the silver dollar being quoted at 94 cents. gold=3s. 11d. The coins in general circulation are 1 dol., 40 c., 20 c., 10 c. and copper, 2 and 1 c. pieces. The weights and measures in addition to those of the metric system are as follow :—

1 quintal	= 101 lb. avoird., or 4 arrobas of 25 lb. avoird.
1 ton = 20 quintals	= 18 cwt. 12 lb. English.
Sugar packed in bags	= 300 to 325 lb.
1 bag of coffee	= 150 to 200 lb.
1 hogshead molasses	= 110 galls.
1 pipe of rum	= 125 galls.
1 bale of tobacco	= from 80 to 200 lb.
3¼ Havana “ boxes ”	or cases of sugar = about 1 hogshead.

Internal Communications.—The island is fairly well provided in this respect, for in addition to the main trunk railway lines which connect all the principal towns with the seaports, the larger sugar estates have private lines of their own, connected with the main lines. Several important railway extensions are contemplated.

Freight.—In accepting freights from Cuba it should be borne in mind that cargoes of molasses and honey are not so profitable as sugar, for 224 gallons, at 10 lb., are reckoned equal to 1 ton English ; but molasses being heavier, and honey still more so, than sugar, it may be safely assumed that the gallon is equal to 12 lb., which gives, for a ton of 2,240 lb., about 2,700 lb., leaving thus an overweight of 400 to 500 lb. per ton, for which no freight is paid, the ton being calculated in gallons as already mentioned.

Customs Regulations.—The port of Havana has been officially designated as the chief Customs port of the Republic, and the

Cuba.

following have been declared to be sub-ports, viz. : Matanzas, Cardenas, Cienfuegos, Sagua, Caibarien, Santiago, Manzanillo, Neuvas, Guantánamo, Gibara, Baracoa, Trinidad, Santa Cruz, Zaza, Batabano, Nueva Gerona, Banes, Nipe, and Puerto Padre. The regulations in force at these ports provide that every vessel shall, on arrival, be placed under Customs control until duly discharged. Passengers with no dutiable property in their possession may be permitted to land without detention. If, upon the unloading of any cargo, there be found goods, wares, or merchandise not duly declared on the manifest, such articles in excess may be added if the omission can be reasonably accounted for. Should any packages or articles named on the manifest be missing on the arrival of the vessel, the latter shall pay a penalty of 1 dol. per ton measurement, unless such deficiency shall be satisfactorily explained or accounted for. Within 24 hours after the arrival of any vessel the master must, under a penalty for failure of 500 to 2,000 dols., produce to the proper officer a manifest of her cargo, with the marks, numbers, and description of the packages, and the names of the respective consignees or shippers. Cuban consuls have been appointed at the principal ports, and they will certify the manifest, invoice, etc.

No vessel will be allowed to clear for another port until all her cargo has been landed or accounted for. All goods not duly entered for payment of duty within ten days after their arrival in port shall be landed and stored, the expense thereof to be charged against the goods. Prior to the departure of any vessel from any of the ports above designated, the master must deposit with the proper officer a manifest of the outward cargo of such vessel, specifying the marks and numbers of packages, a description of their contents, with names of shippers and consignees, and a statement of the value of each separate lot; also names of passengers and their destination. A clearance will then be granted to the vessel. No prohibited or contraband goods shall be exported.

Tonnage Dues.—On entry of a vessel from a port not in Cuba, 10 c. per net reg. ton; from a Cuban port, 2 c. Vessels entering or clearing in ballast, half the above. The tax shall not exceed 1 dol. per net ton in any one year, beginning from date of first payment, for a vessel coming from outside Cuba, and from a Cuban port, 40 c. per net ton.

Harbour Improvement Tax.—In addition to tonnage dues, every steamer entering at the ports of Cuba must pay a Harbour Improvement Tax of 8 dols. 50 c., sailing vessels, 4 dols. 50 c.

BANES.

Banes, on the north coast of the island of Cuba, is in lat. 20°47' N., long. 75°37' W.

Exports.—Mahogany, cedar, and sugar.

Accommodation.—The entrance is narrow and winding, but there is plenty of water, and once through the channel vessels are quite safe.

Expenses same as Gibara.

BARACOA.

Baracoa, on the N.E. coast of Cuba, is in lat. 20°19' N., long. 74°36' W.

Cuba—Baracoa (*continued*).

Export.—Fruit.

Accommodation.—The entrance is $1\frac{1}{2}$ cables wide; inside it opens out to 6 cables by 3 cables, and has a depth of 5 to 6 fathoms. It is exposed to the prevailing wind, which throws in a heavy sea. It is seldom visited except by coasters.

CAIBARIEN.

Puerto de Caibarien is in lat. $22^{\circ}28'$ N., long. $79^{\circ}32'$ W., on the N. coast of Cuba, about 15 miles from Cay Frances, and is the port for the rich sugar and tobacco district.

Population.—10,415.

Imports.—Provisions, machinery and implements, stuffs, coal, lumber, and cattle.

Exports.—Sugar, tobacco, asphalt, honey, fruits, cedar, and mahogany.

Accommodation.—Vessels of 9 ft. draught can anchor off the town of Caibarien, but those of heavier draught load at Cay Frances; well-sheltered and good holding ground in $3\frac{1}{2}$ fathoms. Vessels entering should give this cay a berth of $1\frac{1}{2}$ miles, and stand in until the shipping in port bears E.S.E., and then run for the anchorage. With the wind from the E. (prevailing wind) vessels can lie in safety in any part of the anchorage or bay. There are two tugs. Railroad connection with Remedios, Camajuani, and Placetas.

Pilotage.—Compulsory. Pilot always to be had. Fees:—

		Dols.	c.			Dols.	c.
Vessels from 1 to	50 tons	2	00	Vessels from 601 to	700 tons	18	00
" 51 "	100 "	4	50	" 701 "	800 "	20	00
" 101 "	150 "	6	00	" 801 "	900 "	22	00
" 151 "	200 "	6	50	" 901 "	1,000 "	25	00
" 201 "	250 "	8	00	" 1,001 "	1,500 "	27	00
" 251 "	300 "	9	00	" 1,501 "	2,000 "	30	00
" 301 "	350 "	10	00	" 2,001 "	2,500 "	34	00
" 351 "	400 "	12	00	" 2,501 "	3,000 "	36	00
" 401 "	450 "	14	00	" 3,001 "	3,500 "	38	00
" 451 "	500 "	15	00	" 3,501 "	4,000 "	40	00
" 501 "	600 "	16	00	" 4,001 and upwards		42	00

Port Charges.—Tonnage Dues:—20 c. per net ton, half refunded if clearing in ballast; 10 c. per net ton if entering in ballast. **Port Dues:**—Steamer, 8 dols. 50 c.; sailing vessel, 4 dols. 25 c. On cargo, dues are payable by importer. Commission on freight or disbursements, $2\frac{1}{2}$ per cent. Dispatching and sundries, 34 dols. Boat hire for one journey to ship, 10 dols. 60 c.; 3 dols. for clerk. **Stevedore:**—Day work, 4 dols.; night work, 8 dols.; festival day work, 5 dols. 30 c., and 10 dols. 60 c. night work. Stowing sugar, 5 c. per bag. **Water:**—Good fresh water can be obtained.

Shipmasters must proceed to Caibarien to report their vessels.

Customs regulations, see **Cuba**.

CARDENAS.

Cardenas, in lat. $23^{\circ}1'$ N., long. $81^{\circ}12'$ W., stands on a swampy shore at the S.W. side of the bay of the same name.

Population.—24,280.

Cuba—Cardenas (*continued*)

Imports.—Provisions, machinery, lumber, coal, etc.

Export.—Sugar.

Accommodation.—Cardenas Bay is about 12 miles deep N.E. and S.W., and from 9 to 10 miles wide. The north side is bounded by a very narrow strip of low, sandy, wooded land, which terminates to the eastward at Hicacos Point. The entrance to this bay is so blocked up by small cays and shoals that the Government will not allow pilots to take vessels of more than 15 ft. draught inside; vessels above that draught lie in the roads in comparative safety, except in case of northers. Small vessels load at the wharf, where there is at times 7 ft. of water; bottom soft mud. A channel has been dredged allowing vessels up to 18 ft. 6 in. draught to go to La Poza's anchorage, which is sheltered from all winds. The channel is well buoyed on each side, but a pilot should be employed if the breeze be strong.

Small steamers and droghers navigate within the cays as far eastward as the River Sagua la Grande.

Railway communication with Bemba.

Pilotage.—Compulsory.

American gold.				American gold.			
Dols. c.				Dols. c.			
From	1 to	50 gross tons	2 50	From	451 to	500 gross tons	9 00
"	51	" 100	3 00	"	501	" 600	10 00
"	101	" 150	3 50	"	601	" 700	11 00
"	151	" 200	4 00	"	701	" 800	12 00
"	201	" 250	4 50	"	801	" 900	13 00
"	251	" 300	5 00	"	901	" 1,000	14 00
"	301	" 350	6 00	"	1,001	" 2,000	16 00
"	351	" 400	7 00	"	2,001 and above		18 00
"	401	" 450	8 00				

This shows pilotage to outer anchorage; to inner harbour, or usual anchorage, double.

For removing vessels from or to the quays the charge is the same as that of inward or outward pilotage, payable according to tonnage. For changing anchorage in the harbour, or for moving from one wharf to another, one half of the full charge.

Port Charges.—Tonnage Dues:—10 c. per ton. **Port Dues:**—Sailing vessels, 4 dols. 25 c.; steamers, 8 dols. 50 c. (American gold).

Towage:—Rates according to agreement. **Shipbroker:**—Sailing vessel, entrance, 5 dols.; clearance, 5 dols.; steamer, entrance and clearance, 10 dols. each. **Commission:**—On freight, $2\frac{1}{2}$ per cent.; on disbursements, $2\frac{1}{2}$ per cent. **Stevedore:**—Loading sugar, 3 c. per bag. Discharging coal, 30 c. per ton. **Labour:**—3 dols. per day per man. **Lighterage:**—

In the bay, 5 c. per 100 lb.; in Diana Cay, 6 c. per 100 lb.; in Piedras Cay, $7\frac{1}{2}$ c. per 100 lb. The shipper pays the ordinary lighterage. Extra lighterage is only payable by the ship when specially stated in charter-party. If so provided, the following are the rates: 10 c. per 100 lb. to Diana Cay; $2\frac{1}{2}$ c. per 100 lb. to Piedras Cay. **Spanish Manifest** and manifest for auditor, 4 dols. **Ballast:**—2 dols. per ton. **Boat Hire:**—Steamers loading sugar, 10 dols. 60 c.

Pro Forma Charges on a British steamer of 1,320 net tons, from New York in ballast, and bound for North Cape Hatteras with a cargo of sugar:—

Cuba—Cardenas (*continued*).

	Dols.	c.	Dols.	c.
Entry, clearing, copies of manifest and auditor's copy			24	00
Harbour tax			8	50
Tonnage dues, 1,320 net tons at 10 c. per ton			132	00
Pilotage, in and out			72	00
Removal from Diana Cay to Bay			9	00
American bill of health			5	00
British Consul's fee			2	05
Stevedore, 15,000 bags at 3 c.	450	00		
Boat hire	10	60		
Spanish gold at 10 per cent.	460	60	418	73
2½ per cent. on disbursement			16	78
			688	06

 =£141 11s. 8d.

Pro Forma Charges on a steamer of 1,320 tons reg., with a cargo of 2,500 tons of coal in, and ballast out, drawing 18 ft. loaded :—

	Dols.	c.	Dols.	c.
Tonnage dues at 10 c. per reg. ton			130	00
Pilotage in and out and removal, 2,085 gross tons			81	00
Boat hire	10	60		
Stevedore, discharging coal at 30 c. per ton	750	00		
Spanish gold at 10 per cent.	760	60	691	46
Harbour tax			8	50
American bill of health			5	00
Petties			2	50
Entry, clearing, copies of manifest and auditor's copy			24	00
			942	46

 =£193 18s. 8d.
CIENFUEGOS.

Cienfuegos, in lat. 22°12' N., long. 80°30' W., is situated in the Bay of Jagua, and is the second town of importance on this side of Cuba.

Population.—30,000.

Exports.—Molasses and sugar.

Accommodation.—This port is quite secure in all winds, with a depth sufficient for vessels of the heaviest draught, but its channel is so narrow and tortuous, and the tides so strong, that it is very difficult to navigate. The entrance is a narrow passage 3½ miles long with great depth of water, shoaling at each side near the land. At one point a sharp bend in the channel makes the passage dangerous for vessels of 3,000 tons and upwards. The currents run strongly. There is no safe anchorage in the entrance channel, the bottom being rock and coral as far as the bend above referred to: 15 to 20 fathoms will be found in the entrance passage; from the bend to the anchorage the depth is from 12 to 14 fathoms. The anchorage ground is in Cienfuegos harbour. Vessels lie a mile or more from the shore, according to their respective draughts of water. The harbour is 16 miles long by 4½ miles broad, and allows uninterrupted navigation. Two quays (13 and 14 ft. alongside respectively) are used by the Customs for import trade. These quays are privately owned. All quays in the harbour are available for export trade. They have from 12 to 14 ft. alongside, and are used by vessels of light draught for loading purposes. There is a fleet of lighters at the port. The Cuban Central Railway have constructed to the west of the city a steel quay with concrete floor. Depth of water alongside from 35 to 36 ft. This quay is equipped for loading and unloading of every description of merchandise.

Cuba—Cienfuegos (*continued*).

The length of the quay is 750 ft., with 275 ft. of landing space. The depth at the end is 36 ft., and for 210 ft. before reaching the end of the dock there is actually 18 ft. of water, increasing to 36 ft. at the point. The Railway Company are adding 75 ft. to the landing department. There is a patent slip with a cradle 160 ft. long and 40 ft. wide to lift 1,200 tons. There are two fairly well-equipped foundries.

Pilotage.—Pilotage inwards or outwards :—

		Dols.	c.			Dols.	c.
Vessels from 80 tons		9	00	Vessels from 801 to 900 tons		28	00
" 81 to 100 tons		11	00	" 901 " 1,000 "		29	00
" 101 " 150 "		13	00	" 1,001 " 1,250 "		30	00
" 151 " 200 "		14	00	" 1,251 " 1,500 "		31	00
" 201 " 250 "		15	00	" 1,501 " 2,000 "		32	00
" 251 " 300 "		17	00	" 2,001 " 2,500 "		33	00
" 301 " 350 "		19	00	" 2,501 " 3,000 "		34	00
" 351 " 400 "		21	00	" 3,001 " 3,500 "		35	00
" 401 " 450 "		23	00	" 3,501 " 4,000 "		36	00
" 451 " 500 "		24	00	" 4,001 " 4,500 "		37	00
" 501 " 600 "		25	00	" 4,501 " 5,000 "		38	00
" 601 " 700 "		26	00	" 5,001 and upwards		40	00
" 701 " 800 "		27	00				

Vessels moving inside of the general anchorage, to load and unload at the wharves, one-third of above ; and hauling fees to and from wharf as follows :—

		Dols.	c.			Dols.	c.
Vessels from 51 to 80 tons		0	70	Vessels from 2,001 to 2,500 tons		1	82½
" 81 " 100 "		0	78	" 2,501 " 3,000 "		2	20½
" 101 " 150 "		0	87½	" 3,001 " 3,500 "		2	27
" 151 " 200 "		0	95½	" 3,501 " 4,000 "		2	45
" 201 " 300 "		1	05	" 4,001 " 4,500 "		2	62
" 301 " 500 "		1	22½	" 4,501 " 5,000 "		2	80
" 501 " 1,500 "		1	40	" 5,001 and upwards		3	15
" 1,501 " 2,000 "		1	57½				

Moving from wharf to wharf, one-sixth of the pilotage and the hauling fees.

Towage :—Vessels of 50 to 100 tons, 20 dols. ; and 5 dols. additional for every extra 5 tons.

Port Charges.—**Reporting Ship** :—2 to 4 dols. **Interpreter's Fee** :—3 dols. **Stamp Paper for Clearance** :—Vessels entering and leaving in ballast, 7 dols. ; entering in ballast and leaving with sugar, 7 dols. 50 c. ; same charges if leaving with molasses or general cargo. **Stamp Paper for Entry** :—Entering in ballast and leaving with sugar or molasses, 4 dols. ; entering loaded and clearing with a cargo of produce, 6 dols. 50 c. **Ballast Dues** :—1 dol. **Coal** :—8 to 10 dols. per ton. **Provisions** :—Beef and vegetables are plentiful and cheap, and water is plentiful and easily obtained. **Stevedore** :—Hhds., 15 to 17 c. ; bags, 3 to 4 c.

Pro Forma Charges on a vessel of 350 tons, entering and clearing with cargo :—

	Dols.	c.
Stamped paper for entry and clearance	14	00
Translated manifest	4	25
Pilotage, inwards and outwards	38	00
" to wharf and back to anchorage	12	66
Hauling fees	2	44
Signals	3	00
Health board and interpreter's fee	4	00
Stevedore, 650 hhds. sugar at 16 c.	104	00
Clearing vessel	4	25

Cuba.**DAIQUIRI.**

Daiquiri, in lat. $19^{\circ}52'$ N., long. $75^{\circ}43'$ W., is an open roadstead about 16 miles E. of the entrance to Santiago harbour.

Population.—5,000.

Imports.—Timber and coal.

Export.—Iron ore.

Accommodation.—There is a large iron ore pier with storage pockets to hold 3,000 tons of ore; also a wharf for merchandise. There are five large iron buoys in the bay for mooring purposes. The depth of water is from 23 to 35 ft. alongside the pier, and 15 ft. alongside the wharf. There is a steam derrick on the wharf. The bay is partly protected by a promontory to the eastward, and vessels can load nearly all the year. There is a railway connection from the mines to the wharf. Fresh water and ordinary supplies are obtainable. The port has a Custom House.

Pilotage.—Compulsory. According to the tariff for Santiago.

Port Charges.—Tonnage Dues:—Vessels with cargo, 10 c. per ton; in ballast, 5 c. per ton. **Towage:**—An average of 50 dols. when the tug is used. **Boat Hire:**—2 dols. per service. **Port Dues:**—8 dols. 50 c. on a steamer; 4 dols. 25 c. on a sailing vessel. **Brokerage:**— $2\frac{1}{2}$ per cent.

GIBARA BAY.

Gibara Bay is in lat. $21^{\circ}6'$ N., long. $76^{\circ}13'$ W.

Population.—About 6,000.

Accommodation.—There is good anchorage in 12 to 18 ft., but open to the N. It is the port of Holguin, a large town about 15 miles in the interior. A pilot should be employed.

Fresh water plentiful.

Pro Forma Charges on a vessel of 359 tons reg., ballast in and cargo out:—

	Dols.	c.
Mooring, 1 dol.; interpreter, 3 dols.	4	00
Ballast guard	1	00
Bill of health, 6 dols.; stamp, 1 dol.	7	00
Entering and clearing	28	00
Harbour master and pass	6	25
Ship's register, 8 dols.; lighter for ballast, 8 dols.	16	00
„ water, 2 days	12	00
Stevedore, gratuity	8	50

82 75 = £17 0s. 6d.

GUANTANAMO or CUMBERLAND HARBOUR.

Guantanamo or Cumberland Harbour, in lat. $20^{\circ}12'$ N., long. $75^{\circ}14'$ W., is situated about 50 miles to the E. of Santiago, and is the finest bay in the island, being about 14 miles in length. The lower or outer bay has been leased to the United States as a naval station. The town of Guantanamo is about 12 miles inland, and is connected with the port by two railways.

Population.—12,000.

Exports.—Sugar, rum, and timber.

Cuba—Guantanamo or Cumberland Harbour (*continued*).

Accommodation.—There are 2 wharves, the Government wharf at Caimanera, where a dry dock has just been built, and the railway wharf at Deseo Point. The latter is 435 ft. long, with a depth of water of 30 ft. for a length of 300 ft., and a maximum of 42 ft. at the end. The distance from here to the town is 13 miles. The Cuba Eastern Railroad Co. has a wharf at Boqueron, on the other side of the harbour, the wharf being 300 ft. long, with 19 ft. of water at the outer end. The distance to the town by this road is 20 miles. The Guantanamo Railroad Co. are completing very extensive repair and machine shops. Vessels are able to go in and out under sail, as there is rarely a day without suitable wind for both operations.

Pilotage.—

		(To be paid in gold).	
		Entrance or Clearance.	Movements in the Harbour.
		Dols. c.	Dols. c.
From	1 to 50 tons	4 00	1 50
"	51 " 100 "	6 00	2 00
"	101 " 200 "	7 50	2 25
"	201 " 300 "	8 00	2 50
"	301 " 400 "	8 50	2 75
"	401 " 500 "	10 00	3 00
"	501 " 700 "	10 50	3 50
"	701 " 900 "	12 00	4 00
"	901 " 1,000 "	13 00	4 50
"	1,001 " 2,000 "	15 00	5 00
"	2,001 " 3,000 "	16 00	5 50
"	3,001 and upwards	17 00	6 00

The fees for pilotage and all movements will be paid on gross tons. Pilotage on vessels of less than 50 tons will not be compulsory.

Night pilotage, double day charges. Night commences half an hour after sunset and ends half an hour before sunrise.

Pilot limits are as follows: In good weather, 1 mile outside of the harbour entrance; in bad weather, a sufficient distance to weather shore.

Customs regulations, see **Cuba**.

Port Charges.—The port charges are almost similar to those at Santiago. **Shipbroker**:—Entrance and clearance, 25 dols.; commission on freight, $2\frac{1}{2}$ per cent. **Stevedore**:—Loading and unloading, 40 c. per ton. **Ballast**:—Sand can be obtained at about 1 dol. 50 c. per ton, delivered alongside the vessel. **Provisions**:—Meat 12 to 15 c. per lb., fish cheap, vegetables moderate. **Water**:—Put alongside for 80 c. per pipe.

Pro Forma Charges on a steam liner of 1,973 tons reg., touching at this port as first port in the island, and discharging 197 tons of cargo:—

	Dols. c.
Navigation tax	394 60
Port tax	8 50
Tax on two passengers landed	2 00
Steam car to town for Customs dispatch	16 00
Interpreter	8 00
Copy of manifest	3 50
Receipts for discharging	78 80
Cables	0 80
Pilotage	48 99
Lighterage of cargo	278 68
$2\frac{1}{2}$ per cent. commission on freights	45 72
$2\frac{1}{2}$ " " on disbursements	14 00

Cuba.

HAVANA.

Havana is in lat. $23^{\circ}8'$ N., long. $82^{\circ}27'$ W. Distance from Liverpool, 3,980 miles.

Population.—297,158.

Exports.—Sugar and cigars.

Accommodation.—Havana possesses one of the finest harbours in the West Indies. Large vessels lie close to the quays in 32 ft. of water at high tide, bow on, with an anchor astern, the cargo being discharged over the bows. This applies only to vessels with general cargoes. The best time to enter is about midday, and for leaving at daylight. Pilots will be found off the Morro. Regulations for the port are handed to masters of vessels by the pilot. There is a floating dock with available docking length of 280 ft., or 360 ft. over all; 72 ft. wide at the top of the entrance; 21 ft. deep on the blocks at high water ordinary springs; lifting power, 5,600 tons. There is also a patent slip, to take vessels of not more than 245 ft. length, with a lifting power of 1,200 tons.

The two shipbuilding yards, one of them being a Government Dockyard, can carry out any kind of repairs, but the cost is heavy.

On the Custom House wharf there are sheers to lift 120 tons, and at the Arsenal a crane to lift 40 tons, at Casa Blanca one to lift 12 tons, and at the Regla warehouses one to lift 15 tons.

Fresh provisions are very dear.

Customs hours for discharging from 6 a.m. to 9 p.m. The most unhealthy season is from July to November.

Time Signals.—Chronometers can be checked. A black ball is hoisted at 11 h. 55 m. a.m. on a flagstaff, on the tower of the Treasury building, above the public clock, and dropped at noon local mean time, corresponding to 5 h. 29 m. 23.6 s. p.m. Greenwich mean time. Morro Castle simultaneously executes the same signal.

Pilotage.—Pilotage Dues inwards, and the same again outwards, in American gold :—

		Dols.			Dols.
Up to 50 tons		4	From 601 to 700 tons		17
From 51 to 100 tons		5	„ 701 „ 800 „		18
„ 101 „ 150 „		6	„ 801 „ 900 „		19
„ 151 „ 200 „		7	„ 901 „ 1,000 „		20
„ 201 „ 250 „		8	„ 1,001 „ 1,500 „		22
„ 251 „ 300 „		10	„ 1,501 „ 2,000 „		24
„ 301 „ 350 „		11	„ 2,001 „ 2,500 „		26
„ 351 „ 400 „		12	„ 2,501 „ 3,000 „		28
„ 401 „ 450 „		14	„ 3,001 „ 3,500 „		30
„ 451 „ 500 „		15	„ 3,501 „ 4,000 „		32
„ 501 „ 600 „		16	„ 4,001 and above		34

Vessels belonging to any regular line of American or Cuban steamers, connecting with Havana, only pay 80 per cent. of the above pilotage rates. Removals, from one anchorage to another, one-quarter the above rates; from anchorage to the mole, or vice versa, one-half the above rates. Night pilotage double the above rates.

Towage.—Tariff of charges for the towage of vessels entering or leaving the port, and from one part of the harbour to another: Vessels from 1 to 100 tons gross, 6 dols.; vessels over 100 tons from, or to, outside the Morro Castle, not over 1 mile, 6c. per ton. Vessels that are towed more than 1 mile pay 1 c. per ton extra. Towage in the harbour: Vessels

Cuba—Havana (*continued*).

from 1 to 200 tons, 6 dols. ; over 200 tons, 3 c. per ton. The signal for a tug shall be a flag on the jib stays. Vessels requiring towage in the harbour should advise the time and place where the tug is desired. Towages are understood to be from one part of the harbour to another ; all delay, or any other work done by the tug, shall be paid at the rate of 20 dols. per hour, or any part thereof. The rates for services rendered to vessels in distress outside the harbour shall be agreed upon, and should there be any difference it will be settled by the chief officer of the port. The services in the harbour will be charged at the rate of 40 dols. per hour ; should the tug be employed in towing lighters, or any other easy service, the rate will be 20 dols. per hour. The use of pumps in the harbour costs 40 dols. per hour or any part thereof, counting from the time the tug is alongside, providing the diameter of the absorption tube does not exceed 5 in. ; should it be otherwise the charge is proportional. For all services rendered between 1 hour after sunset and 1 hour before daybreak double rates are charged.

Port Charges.—Tonnage Dues :—Foreign ships and Cuban coasting vessels entering and leaving in cargo, 10 c. per reg. ton ; in ballast, 5 c. Cuban vessels entering and leaving in cargo, 5 c. per reg ton ; in ballast, 2½ c. **Harbour Improvement Tax :—**Sailing vessels, 4 dols. 25 c. ; steamers, 8 dols. 50 c. **Wharfage :—**10 reals for every 100 tons per day ; stage hire, 5 reals per 100 tons per day ; mud engine, 1¾ reals per ton, and 1 per cent. thereon. **Commissions :—**On disbursements, 2½ per cent. ; inward freight, 2½ per cent. ; outward freight, 5 per cent. or by agreement. **Ligherage :—**On sugar packed in bags of 300 to 325 lb., 8. c. per bag ; on large quantities a reduction may be obtained. Stevedore's charge is conventional. **Labourers :—**2½ dols. per day ; at night, double.

Pro Forma Charges on a steamer of 1,784 tons entering with cargo and leaving in ballast :—

	Dols.	c.
Permit to discharge immediately on arrival	1	00
„ Pilotage inward (1,680 gross tons)	24	00
„ „ outward	24	00
„ Interpreter's fee on arrival	1	50
„ Translating manifest	11	00
„ Copies of ditto	15	00
„ Custom House entry and clearance	15	00
„ Tonnage dues, 1,140 tons at 10 c.	114	00
„ Harbour improvement dues	8	50
„ Ship-chandler's bill	20	00
„ Stevedores discharging, 800 tons at 35 c.	280	00
„ Cab hire to collect freight	4	00
„ Consular fees	2	12
„ Bill of health (American)	5	00
„ Custom House officer at night, 4 officers 3 nights	60	00
	585	12 = £120 7s. 9d

MANZANILLO.

Manzanillo, or Manzanilla, is in lat. 20°17' N., long. 77°10' W., about 45 miles N.E. from Cape de Cruz.

Population.—About 14,500.

Imports.—General merchandise.

Exports.—Cedar, sugar, tobacco, and mahogany.

Accommodation.—The bay is formed between the mouth of

Cuba—Manzanillo (continued).

the Rio Yara on the north and Caimanera Point on the south, a distance of 3 miles. The shore is low and covered with mangroves, and the water is shallow, caused by the deposit brought down during the rainy season from the rivers Yara, Buey, and Cauto. At a distance of 6 cables N.W. by N. of the port, at the south-west extremity of the town, there is about 16 ft. of water.

Vessels of 9 to 10 ft. draught can lie alongside the wharves; those above that draught load about $\frac{1}{2}$ a mile off shore. A chain of islets, or cays, extending in a S.W. direction over a space of 6 miles, from W.S.W. of the town as far as 5 miles N.W. of it, form a sheltered anchorage. Pilots are to be found off Cape Cruz. Should no pilot be seen, it is advisable to anchor under the land in 5 fathoms of water, and wait until a pilot comes on board. Pilotage is necessary, as the navigation from Cape Cruz as far as the Sloop Channel is very intricate among cays and shoals. There are four wharves for lighters, but no cranes.

Pilotage.—Compulsory.

			U.S. currency.					U.S. currency.	
			Dols.	c.				Dols.	c.
From	1 to	50 gross tons	15	00	From	601 to	700 gross tons	54	00
"	51	" 100	18	00	"	701	" 800	56	00
"	101	" 150	20	00	"	801	" 900	58	00
"	151	" 200	22	50	"	901	" 1,000	60	00
"	201	" 250	25	00	"	1,001	" 1,500	62	00
"	251	" 300	30	00	"	1,501	" 2,000	64	00
"	301	" 350	35	00	"	2,001	" 2,500	68	00
"	351	" 400	40	00	"	2,501	" 3,000	70	00
"	401	" 450	45	00	"	3,001	" 3,500	72	00
"	451	" 500	50	00	"	3,501	or over	74	00
"	501	" 600	52	00					

No extra charge for pilotage during the night. Pilotage is compulsory inside of shoals from Cape Cruz to Manzanillo through the Balandras Channel, and the Cuatro Reales Narrows to take the Sevilla Channel. All vessels are required to hoist up the pilot's boat when entering or leaving port if requested to do so. The fees for movements within port are one-fourth of the pilotage for moving from anchorage to anchorage, and one-half pilotage for moving from anchorage to wharf, or vice versa, or from wharf to wharf.

Port Charges.—For **Tonnage and Port Dues**, see **Cuba**. **Lighterage**:—From 5 to 13 dollars per trip by boats carrying from 10 to 20 tons. **Stevedore**:—2 dols. 50 c. per day. **Labour**:—1 dol. 50 c., and food or an extra 50 c. per day. **Ballast**:—Seldom taken here, but generally discharged; if permission is obtained, ballast may be discharged on the outer side of the quays. **Provisions**:—Fresh fish plentiful and cheap, but other provisions are dear. Meat, 15 c. per lb.

Pro Forma Charges on a steamer of 792 net tons, from a Cuban port and bound to New York:—

	U.S. currency.
	Dols. c.
Pilotage inwards, 1,111 gross tons	62 00
" outwards, " "	62 00
Stevedore and labourers	79 95
Tonnage dues at 2 c. per net ton	15 84
Port dues (harbour improvement)	8 50

228 29 = £46 19s. 5d.

Cuba—Manzanillo (*continued*).

Pro Forma Charges on a steamer of 740 net (1,333 gross) tons, from a foreign port, with a shipment of cattle, and bound for Puerto Cabello in ballast :—

	U.S. currency.	
	Dols.	c.
Pilotage inwards	62	00
„ outwards	62	00
Movement within the port anchorage to dock	31	00
Port dues (harbour improvement)	8	50
Tonnage dues at 10 c. per ton net	70	40
Inspection of ship	2	50
Consular fees	11	96
	<hr/>	
	248	36 = £51 2s. 0d.

MARIEL.

Maríel is about 21 miles W. of Havana. The port extends about 2 miles north and south, and is well sheltered. The entrance is narrow, only 150 ft. wide. Anchorage is in 5 to 6 fathoms.

For rules and dues, see **Cuba**.

MATANZAS.

Matanzas, in lat. 23° 4' N., long. 81° 40' W., is about 45 miles E. of Havana.

Population.—About 45,000.

Imports.—Rice, lard, cheese, codfish, jerked beef, etc.

Exports.—Sugar, molasses, brandy, and rum.

Accommodation.—The port of Matanzas can be entered easily and vessels of the largest size find good anchorage in 4 to 6 fathoms about 3 cables from the shore. Vessels of lighter draught can go further in. The port being exposed to the E.N.E., the land swell sets in with strong winds. The land wind during northers, from the middle of September to the end of February, is frequently interrupted. Vessels may enter the bay either by day or night. There is a steady white light visible 14 miles at Punta Maya, at the mouth of the harbour, about 9 miles from the city. There is a wharf, 912 ft. long, with 43 ft. of water at the end and 25 ft. at the inner portion. A railway connects the wharf with Matanzas and the Havana coast-line.

Health officers visit the vessel between sunrise and sunset, and no communication with the shore is allowed until after this visit.

Pilotage.—Compulsory. Rates per gross ton :—

American gold.				American gold.			
Dols.				Dols.			
From	1 to	50 tons		From	601 to	700 tons	
„	51	100	4	„	701	800	17
„	101	150	5	„	801	900	18
„	151	200	6	„	901	1,000	19
„	201	250	7	„	1,001	1,500	20
„	251	300	8	„	1,501	2,000	22
„	301	350	10	„	2,001	2,500	24
„	351	400	11	„	2,501	3,000	26
„	401	450	12	„	3,001	3,500	28
„	451	500	14	„	3,501	4,000	30
„	501	600	15	„	4,001	and above	32
			16				34

Cuba—Matanzas (*continued*).

Double rates are charged for vessels entering one hour after sunset or one hour before sunrise.

Port Charges.—Tonnage Dues :—Foreign vessels, 10 c. per net ton (maximum to be paid by any one vessel during one year, 1 dol. per net ton). Cuban vessels, 5 c. per net ton (maximum to be paid by any one vessel during one year, 50 c. per net ton). **Custom House Charges :—**Steamers from foreign ports, 8 dols. 50 c.; sailing vessels from foreign ports, 4 dols. 25 c. **Consular Fees :—**British, 65 c.; German, 11 dols. 20 c.; Spanish, 2 dols. 32 c.; Norwegian and Swedish, 55 c. **Charges for Handling Merchandise :—**Hogshead of honey or molasses, 30 c. (Spanish gold); bag of sugar, $3\frac{1}{2}$ c. (S. gold); ton of coal, 35 c. (S. gold); ton of general cargo, 39 c. (S. gold); lumber, 85 c. per 1,000 ft.; half hogshead brandy or rum, $22\frac{1}{2}$ c. (S. gold). **Lighterage :—**Rates according to tariff. **Fresh Water :—**60 c. per pipe. **Sand Ballast :—**70 c. to 1 dol. per ton; stone ballast, scarce. **Provisions :—**Beef, 12 c. per lb.; sweet potatoes, $1\frac{1}{2}$ dols. per barrel. **Hire :—**5 dols. per day (S. silver). **Labour :—**3 dols. (S. gold) per day.

Brokerage :— $2\frac{1}{2}$ per cent.

Pro Forma Charges on a steamer of 2,831 tons :—

	Dols.	c.
Pratique dues	68	00
Entrance dues	8	50
American license	2	50
Copies of manifest	3	00
Telegrams and letters	0	80

Currency.

Dols. c.

Premium, 10 per cent. on 82 dols. 80 c.	8	28
Stowage of 300 half barrels of brandy at $22\frac{1}{2}$ c.	67	50
Discharging 1,534 bales weighing 91,892 ks. at 39 c.	36	20
Examiner's note, 2 at 2 dols. 50 c.	5	00
Boat service, 1 day, 5 dols. silver at 93 per cent.	4	65
Customs clearance	17	00
Advertisements in newspapers	4	25
Commission, $2\frac{1}{2}$ per cent. on freight of the meat	15	76
Commission, $2\frac{1}{2}$ per cent. on freight of the brandy	29	37

Spanish gold at 10 per cent. 270 81 = 246 20

329 00 = £67 14s. 0d.

NIPE.

Nipe is in lat. $20^{\circ}43'$ N., long. $75^{\circ}39'$ W.

Population.—Including suburbs, about 6,000.

Imports.—Railroad and plantation supplies, sugar machinery, and building materials.

Exports.—Sugar, cedar, mahogany, bananas, oranges, and lemons.

Accommodation.—Depth of water at wharf (Antilla) at low tide, 16 ft., high tide, $18\frac{1}{2}$ ft., with 2 to 4 ft. mud, allowing vessels of greater draught than $18\frac{1}{2}$ ft. to dock. Vessels drawing 18 to 20 ft. can get alongside wharf, and load or discharge direct into or from railroad cars. Railway connection with all interior points.

Pilotage.—Compulsory.

Cuba—Nipe (*continued*).

Tonnage, Gross.		Via Punta Tabaco.	Via Jagueyes.	Via Interior Points.
		Dols. c.	Dols. c.	Dols. c.
301 to	350	8 00	10 00	17 00
351 "	400	9 00	10 50	19 00
401 "	450	10 00	12 00	21 00
451 "	500	10 50	13 00	23 00
501 "	600	11 00	14 50	24 50
601 "	700	11 50	16 00	25 00
701 "	800	12 00	17 00	26 00
801 "	900	12 50	18 00	27 00
901 "	1,000	13 00	19 00	28 00
1,001 "	1,500	13 50	20 00	30 00
1,501 "	2,000	14 00	21 00	32 00
2,001 "	2,500	14 50	22 00	33 50
2,501 "	3,000	15 00	23 00	35 00
3,001 "	3,500	15 50	23 50	36 50
3,501 "	4,000	16 00	24 00	38 00

Removals within the port will be charged as follows :—

To change anchorage, one-quarter of pilotage.

To go from anchorage to wharf, or vice versa, one-half of pilotage.

To change from one wharf to another, one-half of pilotage.

Note.—Vessels going to Saetia would pay via Punta Tabaco. Vessels going only to Preston would also pay via Punta Tabaco. Vessels going to Antilla would pay via Interior Points. Vessels anchoring off Mayari River would pay via Punta Tabaco,

Port Charges.—Entrance Fees :—Steamers, 8 dols. 50 c. ; sailing vessels, 4 dols. 25 c. (harbour improvement tax). **Towage** :—For sailing vessels, from Antilla to outside of port, 40 dols. ; to first buoy in stream, 15 dols. Consular invoice to U.S., 2 dols. 50 c. American bill of health, 5 dols. ; suppl. bill of health, 2 dols. 50 c. **Labour** :—Stevedores, 2 dols. to 2 dols. 50 c. per day. Common labourers, 1 dol. 50 c. per day. **Brokerage** :—Entry and clearance vessels, 10 dols. to 25 dols. according to size and service rendered. **Tonnage Dues** :—Vessels entering and leaving with cargo, 20 c. per ton net reg. ; leaving or entering light, 10 c. per ton net reg.

Pro Forma Charges on a steamer of 1,500 tons reg., cargo of merchandise in and ballast out :—

	Dols. c.
Harbour dues at 10 c. per net reg. ton	150 00
Brokerage, ordinary for entry and clearance	10 00
Pilotage, in and out, to Antilla—terminus of railroad	60 00
Harbour improvement tax	8 50
Stoppage at Custom House at Preston for dispatch would increase pilotage a trifle above that indicated, or say	10 00

238 50 = £49 1s. 3d.

NUEVITAS.

Nuevitas, or Neuvitas, in lat. 21°30' N., long. 77°19' W., is the port of Puerto del Principe, a large commercial town about 45 miles in the interior of Cuba.

Population.—6,000.

Imports.—Flour, hardware, lard, barb-wire for fences, dry goods, ale, and lumber.

Cuba—Nuevitas (*continued*).

Exports.—Sugar, honey, hides, mahogany, cedar, and hemp.

Accommodation.—The harbour is completely sheltered and capable of admitting vessels of large draught. There is only water in the inner anchorage for vessels drawing 19 ft. There is railway communication with Puerto del Principe. Lighthouse at Barloveato Point.

Pilotage.—According to tonnage.

Labour.—2 dols. per day. Supplies limited.

PORT CASILDA.

Port Casilda, in lat. 21°45' N., long. 79°58' W., 4 miles from the city of Trinidad, of which it is the mercantile port.

Population.—2,250.

Exports.—Sugar, coffee, tobacco, cocoa, wax, and honey.

Accommodation.—Formerly the left bank of the Guarabo, at its mouth—La Boca—was used as a place of shipment and discharge; but about 80 years since regulations were issued closing La Boca to sea traffic, and making "Casilda" the only authorized mercantile port of Trinidad and its jurisdiction. This regulation, though of many years' standing, does not seem to be generally known, and vessels using the old navigating instructions often make for the mouth of the Guarabo, where they lay off and on for several days in expectation of a visit from the shore, until apprised of their mistake by some fishermen.

Vessels wishing to enter Port Casilda must bear down to Cay Blanco, and take a pilot from the station established on that cay.

The harbour of Casilda is land-locked and safe, but has the inconvenience of having little depth of water near the wharf. It has five anchorages for different draught: at the wharf, 11 ft.; at La Poza, 12½ ft.; at La Punta, 14 ft.; at Bajo del Medio, 16 ft.; and at El Masio, 30 ft. and upwards. These anchorages are respectively distant from the wharf ½, 3, 4½, and 8 miles. Vessels in loading and unloading have to take these anchorages in succession, according to their draught.

The Custom House, mercantile firms, consulates, and other private and official offices, are established at the city of Trinidad, where all business is transacted. The port of Casilda is 4 miles distant from the city, and a railroad connects the two places, but trains do not run daily or regularly, and the line is used mostly for goods traffic.

Port Charges.—According to measurement. See **Cuba. Lighterage**:—1 dol. 50 c. per ton. **Coal**:—10 dols. per ton, not including lighterage. **Bill of Health**:—5 dols. **Provisions**:—Supplies of all kinds can be obtained; fish and vegetables are plentiful.

Port Charges on a steamer of 1,500 tons from a foreign port:—

	Dols.	c.
Port improvement	8	50
Tonnage dues, 10 c. per ton	150	00
Pilotage, in and out	80	00
Bill of health	5	00
	<hr/>	
	243	50
	<hr/>	
	=£50 1s. 0d.	
	<hr/>	

SAGUA LA GRANDE.

Sagua la Grande is in lat. 22° 52' N., long. 80° 8' W., on the north coast of Cuba.

Population.—21,350.

Imports.—Provisions, cooperage stock, hardware, machinery, coarice, ale, salt, firebricks, and sugar bags.

Exports.—Sugar, muscovado, molasses, and tobacco.

Accommodation.—This port extends 14 miles W.N.W. and E.S.E. and 8 miles N. and S. There are several entrances leading to the anchorage for loading, but the only practicable passage for vessels of 16 ft. 4 in. draught is the Boca de Maravillas. As the quays which surround the port are low and the greater portion of them composed of mangroves, the winds cause much sea, notwithstanding the little depth. It is necessary in bad weather and particularly in the months of September and October, to take every precaution which prudence dictates.

The entrance to the Rio Sagua la Grande lies about 6 miles southward of Cristo Cay, and is connected with the interior by a railway. The bar is passable for vessels of 6 ft. draught. The town stands about 12 miles in a direct line from the coast, but 21 miles by the windings of the river.

The Boca de Sagua la Grande affords a passage only for vessels of 8 ft. draught, although at the entrance there is between 26 and 28 ft. of water, which diminishes within. The Playa de Muertos, the Rancho del Cojo, and Canaleja Bay afford good anchorage for vessels of 14 ft. draught, and sheltered from north winds. The former anchorage is preferable on account of its greater depth, and also because vessels of moderate draught can enter without difficulty. Vessels of light draught can anchor off the mouth of the river.

Vessels can enter the harbour and load to 16 ft. 4 in. There is 10½ ft. of water at the principal wharf at high tide; bottom soft mud, and hardly any worms. There are two steam-tugs.

Pilotage.—Compulsory.

Port Charges.—**Ballast:**—Sand ballast, 40 to 60 c. per ton. **Water:**—1½ to 2 c. per gallon. **Provisions:**—Beef, 15 to 20 c. per lb. Bread, 6 c. per lb. Fuel, 4 dols. per cord. **Brokerage:**—Chartering commission, 5 per cent.; disbursing and advancing, 2½ per cent.; drawing, 5 per cent. **Wharfage:**—1¼ c. per ton per day. **Lighterage:**—None inside the port, but should vessels go to Esquivel to finish loading, the extra lighterage is charged, 6 to 8 c. per bag, 50 c. per hhd. **Stevedore:**—4½ c. per bag, 25 to 50 c. per hhd., according to contract made with master of the vessel. **Permit** to discharge ballast, 1 dol. per day.

The custom of the port is, that steamers loading here and at Esquivel have an agreement with chandlery for boat hire, and pay at the rate of dols. per day all the time the vessel is in port.

Pro Forma Charges on a vessel measuring 400 tons, and laden with coal or any other merchandise, and loading 700 hhds. of sugar :—

	Dols.	c.
Pilotage, in and out	42	00
„ to and from wharf	14	00
Wharfage, 12 days, at 1¼ c. per ton per day	60	00
Clearance expenses	10	00

Carried forward 126 00

Cuba—Sagua la Grande (*continued*).

	Dols.	c.
Brought forward	126	00
Bill of health	5	00
2½ per cent. commission on disbursements	4	01
2½ per cent. commission collecting freight, 425 tons coal, at 12s. 6d. per ton, plus 10 per cent. primeage and 20 per cent. premium, equivalent in specie gold to 1,542 dols. 72 c.	38	57
5 per cent. commission on outward freight, say 700 hhds. sugar, at 6 dols. 50 c. per hhd. specie gold, 4,550 dols.	227	50
	401	08 = £82 10s. 5d.

SANTIAGO DE CUBA.

St. Jago, or Santiago de Cuba, in lat. 20°0' N., long. 75°49' W., is on the S. coast of the island.

Population.—45,470.

Imports.—Flour, corn, rice, jerked beef, codfish, oil, and all kinds of American provisions; coal, lumber, dry goods, ironware, and all sorts of manufactured merchandise.

Exports.—Sugar, molasses, rum, coffee, cocoa, tobacco, copper and iron ore, cotton, honey, wax, fustic, and mahogany.

Accommodation.—The port, about 6 miles long by 2½ miles broad, has a very narrow entrance, but with water sufficient for the largest line-of-battle ship. Vessels drawing over 20 ft. cannot come alongside the Government wharf. There are also two wharves belonging to Campana Travierra de Cuba and Gallego Messa Co., for vessels drawing not more than 16 ft.; wharfage is charged in accordance with the Government tariff. The harbour is well protected from the weather, being surrounded on all sides by hills. The city is 6 miles from the mouth, on the east side of the bay; opposite are the wharf and station of the Cobre Railway, leading up to the mines. There is 4 fathoms water close to the wharf at Cobre. There is no dock, merely a small careening ground. There are two foundries for machinery, and on the east side, a mile from the city, there is an iron pier, with a depth of water alongside of about 32 ft., for loading iron ore from the mines at Juragua. Vessels are discharged broadside on to the wharf. Vessels chartering for this port should stipulate for lighterage to be paid by charterers as, although there may be sufficient water at the wharves, coal vessels are always discharged in the stream. There are two good hospitals for seamen; the charge is 1 dol. 50 c. per diem, everything included. Quarantine is enforced when a vessel brings a foul bill of health, or when deaths have occurred on board during the voyage, and varies from 3 to 40 days. A bill of health is indispensable. Shipmasters receive a copy of the harbour dues on their arrival.

Pilotage.—

From	1 ton gross to 50 tons gross	Dols.
.. 51	100	4
.. 101	150	5
.. 151	200	6
.. 201	250	7
.. 251	300	8
.. 301	350	10
.. 351	400	11
.. 401	450	12
.. 451	500	14
.. 501	600	15
.. 601	700	16
.. 701	800	17
.. 801	900	18
..	..	19

Cuba—Santiago de Cuba (*continued*).

From	901 tons gross to	1,000 tons gross.	Dols.
..	1,001 ..	1,500 ..	20
..	1,501 ..	2,000 ..	22
..	2,001 ..	2,500 ..	24
..	2,501 ..	3,000 ..	26
..	3,001 ..	3,500 ..	28
..	3,501 ..	4,000 ..	30
..	4,001 ..	5,000 ..	32
..	5,001 ..	and upwards	34
			36

The above is for pilotage entering; the same amount is charged for going out. For every movement in the bay, 25 per cent. of the pilotage for entering is charged. A steamer that enters, anchors for the medical visit, and then goes to the wharf, is considered to have made one full movement, and is charged half the pilotage rates for it.

Port Charges.—Harbour Improvement Tax:—Each steamer entering, 8 dols. 50 c.; each sailing vessel entering, 4 dol. 25 c.; each ton of cargo landed from a steamer, 25 c.; each ton of cargo landed from a sailing vessel, 12½ c.; each ton of coal landed from a steamer, 12½ c.; each ton of coal landed from a sailing vessel, 12½ c. **Tonnage Dues:**—10 c. per ton with cargo; 5 c. in ballast. **Water:**—50 c. per 120 gallons. **Provisions:**—Beef 15 per lb. **Fuel** (wood):—2½ dols. per cord. **Coal:**—from 7 to 10 dols. per ton. **Stone Ballast:**—2 dols. per ton; sand ballast, 1 dol. per ton. **Stevedore:**—Sugar, 3 to 4 c. per bag; general cargo, 40 c. per ton. **Labour:**—1 dol. 50 c. to 2 dols. per man per day.

Note.—The Custom House hours are from 6 a.m. to 11 a.m., and from 1 p.m. till 5 p.m. Any extra work has to be paid for by the ship at the following rate, for each inspector: From 6 p.m. to 12 p.m. 5 dols.; from 12 a.m. to 6 a.m., 5 dols. Holidays and Sundays: From 6 a.m. to 6 p.m. 5 dols.; from 6 p.m. to 12 p.m. 5 dols.; from 12 p.m. to 6 a.m., 5 dols. The charges for labour, boat hire, cooperage, and clerks tallying cargo are double on Sundays and holidays.

Commission:—For procuring a freight for vessels arriving in ballast, 5 per cent.; with cargo, 2½ per cent.; collecting freight, 2½ per cent. disbursements of vessels with funds in hand, 2½ per cent.; without funds, 5 per cent.; on invoices, 2½ per cent.; sales, half generally returned, per cent.; for guarantee on sales, net cash, 2½ per cent.

Pro Forma Charges on a British steamer of 1,000 tons with a cargo of coal in, loading 1,600 hhds. of sugar:—

	Dols.	c.
Port tax	8	50
Tonnage tax	100	00
Consular fees	0	63
Wharfage, 10 days	50	00
Pilotage, in and out	40	00
Translating manifest	10	00
Commission collecting freight on 2,000 tons of coal at 12s. 6d.	159	96
Commission on disbursements	5	60
Commission on freight, 1,600 hhds. of sugar at 6 dols. 50 c.		
per hhd.	260	00

634 69=£130 11s.1

SIERRA MORENA.

Sierra Morena is in lat. 22°52' N., long. 80°30' W., between Sagua Grande and Cardenas.

Only coasting vessels use this port now.

*Cuba.***TUNAS DE ZAZA.**

Tunas de Zaza, in lat. $21^{\circ}39'$ N., long. $79^{\circ}38'$ W., is the seaport of Santo Spiritu, with which it is connected by railway.

Population.—500.

Imports.—Foodstuffs.

Exports.—Sugar, tobacco, honey, mahogany, logwood, cedar, and tortoiseshell.

Accommodation.—Vessels drawing 20 ft. can come here and anchor in the bay about a mile from the shore, midway between Zaza Point and Caney Point. There is a small wet dock, with 13 ft. on the sill, capable of taking three small vessels at once.

This is a port of entry, and there is a Custom House.

Pilotage.—8 c. per ton.

Port Charges.—**Shipbroker** :—17 dols., entrance and clearance.
Stevedore :—Loading or discharging, 1 dol. 35 c. per day. **Ballast** :—
and can be taken from Cay Blanco without charge.

HAITI.

The Republic of Haiti occupies the western portion of the island of the same name. It has an area of about 10,200 square miles, and a population of $1\frac{1}{2}$ millions. The over-sea trade of the Republic is small, the high export duties and heavy general charges preventing any great development in this direction.

There is a postal and telegraph service, and railway connection between Cap Haitien and Port-au-Prince.

Haitien currency consists of silver dollars or gourdes of 100 centimes of a nominal value of 4s., but at present (January, 1909) only worth 18 c. American gold.

The chief expenses of a vessel in Haitien ports are payable in the Republican silver or paper dols. Captains of vessels visiting these ports should therefore take with them gold coins, or accredited drafts, which they can readily place at the current rate of exchange of the day. This considerably reduces the cost of disbursement, but owners, agents, or masters must take care that their charter-parties are in order in so far as they provide that the ship's disbursements are to be regulated at the rate of exchange current on the day of payment.

The French metric system of weights and measures is used in commercial operations.

Manifests must indicate the number of trunks, boxes, bales, packages, or casks; also the number, marks, and counter-marks of each trunk, box, bale, package, or cask, along with the contents thereof, in reference to the number of pieces, lengths, weights, and measurements, as well as of all wood, planks, etc. The manifest must therefore give a detailed description of each article forming the cargo together with an invoice showing the value. The quantity of goods entered in the manifest must be stated in words and not in *numbers*. The manifest must also indicate the name of the ship, her tonnage, and the names of the captain, consignor, and consignee.

ACUL.

Acul, or Lacul, in lat. $19^{\circ}45'$ N., long. $72^{\circ}27'$ W., is on the north coast of Haiti.

This port has been closed to foreign commerce since 1870.

AQUIN.

Aquin, in lat. $18^{\circ}17'$ N., long. $73^{\circ}23'$ W., is on the south coast of Haiti. The place is healthy.

Exports.—Logwood, coffee, and cotton.

Accommodation.—The bay of Aquin is well sheltered. The anchorage ground is in $3\frac{1}{2}$ to 4 fathoms of water, about a mile from the shore, but vessels drawing 14 ft. can anchor half-a-mile off. The best entrance channel is that between Point de Morne Rouge and the Isle le Diamant, in the centre, as a reef is said to extend a great distance out from the S.E. point of the Great Cay, so that this passage, although it appears on the

Haiti—Aquain (continued).

chart wider, is actually much narrower than the other. Fresh water has to be brought from a creek about 3 miles from Aquain.

Port Charges.—Tonnage Dues :—1 dol. 83 $\frac{1}{3}$ c. Haitien currency and 25 per cent. additional gold. For other charges, see **Aux Cayes**.

AUX CAYES.

Aux Cayes is in lat. 18°16' N., long. 73°48' W. The place is healthy.

Population.—About 25,000.

Imports.—Cotton stuffs, provisions, wines, oil, etc.

Exports.—Coffee, logwood, cocoa, hides, and cotton.

Accommodation.—There is a depth of 3 to 4 fathoms close to the town. The anchorages in the bay are safe. Depth at entrance to port 40 to 50 ft. Depth in port, 30 to 40 ft. There is a wharf 450 ft. long and 40 ft. wide with 3 ft. of water at end. Wood, water, bread, and fresh meat are easily procured at reasonable prices.

Pilotage.—Optional. Pilots offer their services, but they are not to be relied upon. Their charges are : Vessels from 50 to 100 tons, 5 dols. ; 101 to 200, 9 dols. ; 201 to 300, 12 dols. ; 301 to 400, 16 dols. ; 401 and upwards, 20 dols., Haitien currency. On half the value of the above rates, 20 per cent. must be added, plus 10 per cent. for Government.

Port Charges.—Tonnage Dues :—1 dol. per ton and 50 per cent., and 33 $\frac{1}{3}$ per cent. U.S. currency, plus 25 per cent. **Stamps :—**About 15 dols.

Labour :—Head workman, 5 dols. per day. **Lighterage :—**Inwards, paid by consignees of goods ; outwards, coffee, 20 c. per bag ; logwood, 3 dols. 50 c. per ton. **Commission :—**On disbursements, 1 per cent. ; on outward freight, 2 $\frac{1}{2}$ per cent. ; on intercolonial homeward freights, 2 $\frac{1}{2}$ per cent.

Discharging Ballast :—1 dol. 50 c. per ton. **Stowage :—**Logwood, 25 c. per ton.

Pro Forma Charges on a vessel loading cargo :—

	Haitien Cy.	
	Dols.	c.
Interpreter	5	00
Water tax	10	00
Stamps	19	25
Expedition at Custom House, Administration, and Treasury .	16	10
Pilotage, in and out	10	00
Pilotage, to Government, 10 dols., and 20 per cent. 2 dols., and 10 per cent.	13	00
Sanitary visit, port doctor	8	00
„ „ to Government (plus 25 per cent. gold)	22	92
Port pass	2	00
Bill of health, British, 10s.	13	35
	119	62
	£4 9s. 9d.	

CAP HAITIEN.

Cap Haitien is in lat. 19°45' N., long. 72°17' W. The place is considered very healthy.

Population.—About 29,000.

Imports.—Dry goods, provisions, lumber, earthenware, and general merchandise.

Exports.—Coffee, cocoa, logwood, hides, skins, wax, and bone.

Haiti—Cap Haitien (*continued*).

Accommodation.—Cap Haitien is a safe harbour, but rather difficult of entrance. Vessels are not allowed to enter after 6 p.m. The anchorage is in 8 to 10 fathoms, about $\frac{1}{2}$ a mile from the town. Vessels of 18 ft. draught can approach to within 5 cables length of the town. There is a lighthouse, painted white, which can be seen in clear weather at a distance of 9 miles. Good water and wood can be obtained. Vegetables, meat, and fish are abundant, and provisions can always be had. The wharf is in ruins, and cargo must be discharged into lighters (of 10 to 15 tons).

Pilotage.—Strangers should take a pilot, who will be generally found off the port till 5 p.m.

Port Charges.—Tonnage Dues:—Paid only on import cargo discharged in Haitien ports; 1 dol. 83 $\frac{1}{2}$ c. (gold) per ton, plus 25 per cent. paid by consignees of the goods. **Landing Expenses:**—1 dol. (gold) per ton, paid by consignees of the goods. **Lighthouse Dues:**—6 dol. (American gold) per 100 tons reg. **Stevedore:**—75 c. to 1 gourde per ton. **Lighterage:**—2 goudes per ton. **Shipping Expenses** on exports, according to convention.

Pro Forma Charges on a sailing vessel of 500 reg. tons, ballast in and cargo out:—

	Haitien Gourdes.	American Gold.
Signalizing vessel	2 83	—
" " 25 per cent. in gold additional	—	0 71
Pilotage in, to pilot	8 00	—
" to Government	14 67	—
" 25 per cent. additional	—	3 67
Custom House clerk for attendance on board	5 00	—
Interpreter's fees	5 00	—
Discharging ballast at 25 c. per ton discharged, 150 tons	37 50	—
Pilotage to ballast ground	6 00	—
Stamped papers	17 50	—
Expedition papers	17 50	—
Fountain duties	10 00	—
Fort pass	4 20	—
Post Office and La Place clearance	1 60	—
Pilotage out, to pilot	5 00	—
Pilotage out, to Government	6 50	—
Lighterage, 2 goudes per ton	1,000 00	—
Stevedore at 75 c. per ton	375 00	—
Lighthouse dues at 6 dols. per 100 tons	—	30 00
	1,516 30	34 38
	=£56 17s. 3d.	=£7 1s. 6d. =£63 18s. 9d.

FORT LIBERTE, OR FORT DAUPHIN.

Fort Liberté, formerly called Fort Dauphin, is in lat. 19°45' N., long. 71°54' W.

Population.—About 2,000.

Export.—Logwood and logwood roots.

Accommodation.—Fort Liberté is a land-locked basin, with accommodation for vessels of the largest draught; good holding ground. The channel into the port is about a mile long, but so narrow and tortuous that it is difficult for sailing vessels to effect an entrance without a N.E. wind. The harbour is about 3 miles long and a mile broad. Very good anchorage is to be had within a $\frac{1}{4}$ of a mile from the shore, and there is a

Haiti—Fort Liberté, or Fort Dauphin (*continued*).

good careening spot on the N. shore, a little E. of the inner end of the channel. Fort Liberté is only a port for loading, vessels having to enter and clear at Cap Haitien, about 25 miles distant.

Pilotage.—Steamers of 600 tons, 5 dols. ; sailing vessels, 600 tons, 10 dols. To Cap Haitien and back, 40 gourdes.

Port Charges.—Signalling on entrance and clearance, 14 gourdes.

Permits :—5 gourdes. **First Pass** :—For Fort Liberté, 2 gourdes. **Coast**

Permit :—65 gourdes. **Ballast Ground** :—3 gourdes.

GONAÏVES.

Gonaïves, in lat. $19^{\circ}26'$ N., long. $72^{\circ}40'$ W., is situated on the west coast of Haiti. The climate is healthy.

Population.—About 15,000.

Imports :—Dry goods, hardware, and provisions.

Exports.—Mahogany, coffee, cotton, lignum-vitæ, and logwood.

Accommodation.—Gonaïves possesses a fine harbour of easy entrance. The anchorage, about a $\frac{1}{4}$ of a mile off the shore, is in $3\frac{3}{4}$ fathoms. The bay is open to winds from the W.S.W., but there is a well-sheltered anchorage in Hospital Bay, about a mile from the town, in $3\frac{3}{4}$ fathoms. A railway is now in course of construction to connect Gonaïves with Ennery, St. Michel, Hincha, and Gros Morne. There are two wharves.

Pilotage :—10 dols. (Haitien).

Tonnage and other dues, see **Haiti**.

JACMEL.

Jacmel is in lat. $18^{\circ}18'$ N., long. $72^{\circ}38'$ W. The town stands on the N.E. corner of the bay, on the east side of the river Jacmel.

Population.—About 7,000.

Imports.—Salt provisions, timber, cotton goods, salt, flour, etc.

Exports.—Coffee, orange peel, logwood, fustic, mahogany, cotton, etc.

Accommodation.—The harbour is 2 miles deep, and open to the S.E. Approaching the port there are no dangers until nearing the town, when the reef must be approached with caution ; the sea, however, generally breaks upon it. The northern edge of this reef is about $\frac{1}{2}$ a mile southward of the town, and extends about $\frac{1}{2}$ a mile from the E. shore of the bay. The best anchorage for moderate sized vessels is in $5\frac{1}{2}$ to 6 fathoms north of the outer breaker on the western extremity of the reef, with Cape Marrechaux bearing S.E. $\frac{3}{4}$ E., the fort over the town bearing N.E. by N., the ruins of a battery southward of the town N.E. by E. Approaching from the E. the most conspicuous mark is a mass of white cliff on the western shore about S.S.W. of the town. This harbour is tolerably safe from November to June, both inclusive ; the remaining months of the year, viz., July, August, September, and October, the weather is inclined to be boisterous occasionally. Hurricanes have from time to time visited the bay with great violence during these months, especially August and September.

The western approach to the harbour is easy, and the most conspicuous landmark is a vertical cliff or notch in the western cape (Cape Jacmel). In the centre of the bay no bottom is found with 80 fathoms. The soundings, which extend $\frac{1}{2}$ a mile from the shore, are steep. There is anchorage about

Haiti—Jacmel (*continued*).

$\frac{1}{4}$ to $\frac{3}{4}$ of a mile from the landing stage, alongside of which only 6 ft. of water is found. A heavy swell sets into the bay in the afternoon daily. The local Government own three small piers.

Water:—Good and plentiful, but is carried in casks on board; no floating tanks exist; it is conducted to the landing stage in pipes, and casks can be filled in boats. Provisions are scarce. **Labour**:—Easily procured; as also is cartage, etc.

Port Charges.—Port Dues:—Including pilotage and doctor's visit, about 6s. per ton. **Tonnage Dues**:—Payable according to the measurement here. A vessel arriving in port for the first time is subject to measurement at a cost of about £10. The following are the general charges on steamers trading to this port:—

	Haitien Currency. Dols. c.	American Currency. Dols. c.
Pilotage, to pilot	16 00	—
„ duty	21 55	—
„ surcharge	—	3 44
Haitien doctor's fee—		
If first Haytien port visited	15 00	—
All subsequent ports, visé, 2 dols. 50 c.; bill of health, 2 dols. 50 c.	5 00	—
Sanitary dues, for doctor	14 50	—
„ „ for inspection	22 92	—
„ „ surcharge	—	5 75
Custom House stamps: Import, 6 dols. 30 c.; export, 2 dols. 10 c.	8 40	—
Interpreter for manifest	5 00	—
Lighterage on logwood, 75 c. per ton.		
Lighterage on coffee, 30 c. per sack.		

Pro Forma Charges on a sailing vessels of 212 $\frac{3}{4}$ tons:—

Tonnage dues	} 1 dol. 83 $\frac{1}{2}$ c. per ton .	Dols. c. 212 35
„ „ plus 50 per cent.		106 18
„ „ plus 33 $\frac{1}{3}$ per cent.		70 80
Pilotage, in and out		5 00
Clearance		6 00
Entry and clearance to Government		8 00
Water tax		6 00
„ plus 20 per cent		1 20
Interpreter		5 00
	Dols. c.	
Doctor's fee	8 00	
Government duty on doctor's visit	15 00	
		23 00
Sealing hatches		1 00
Watch of Customs officers on board		10 00
Stamps, inward and outward cargo		12 00
Expedition in Custom House		10 00
Droit d'Echelle, or right to proceed to other Haytien ports	35 00	
Plus 20 per cent.	7 00	
Plus 10 per cent.	3 50	
		45 50

522 03 = £19 11s. 6d.

The droit d'Echelle is payable at the port from which clearance is taken for another Haitien port; but if cargo is taken in at that port, the amount is returned at the time of clearing

JEREMIE.

Jeremie is in lat. 18°38' N., long. 74°12' W.

Population.—About 6,000.

Haiti—Jeremie (continued).

Exports.—Coffee, cocoa, logwood, hides, shell, honey, wax, cotton, lignum-vitae, braziletto, mahogany, and goat skins.

Accommodation.—The anchorage is in 28 to 30 ft., 3 cable lengths from the shore, but it is exposed to the full force of the N.E. winds. There is no bar. A wharf has been provided for loading and unloading lighters.

Pilotage.—Compulsory. To Government, 12 dols. 84 c. (Haitien cy.), plus 3 dols. 21 c. gold; to pilot, 12 dols. 84 c. (Haitien cy.), plus 3 dols. 21 c. gold.

Port Charges.—**Wharfage** :—1 dol. (Haitien cy.) per 1,000 lb. **Clearance Fees** :—13 dols. (Haitien cy.). **Tonnage Dues** :—1 dol. 83½ c. gold per ton of cargo, plus 25 per cent. **Towage** :—2 dols. (Haitien cy.). **Lighterage** :—1 dol. gold per ton.

NAVASSA.

Navassa Island, in lat. 18°29' N., long. 75°3' W., lies between Santo Domingo and Jamaica.

Population.—230 negroes and 16 whites.

Export.—Guano.

Accommodation.—The island is visible 20 miles off. The anchorage is on the S.E. side, in 11 to 14 fathoms. Moorings, consisting of a single anchor and 30 fathoms of chain, attached to a buoy, are laid down in 15 fathoms, at the distance of 120 fathoms from the shore, and are said to be of sufficient strength to hold a ship of 700 tons. Two or three vessels can load at the same time. There is a strong swell at times when the trade wind is fresh, but very seldom a southerly or westerly wind, so that the anchorage may be considered safe.

Vessels proceeding to Navassa should carry a sufficient quantity of water to serve them for their return voyage, as the supply for the island is obtained by condensing; the rain seldom falls. The same remark applies to provisions, etc.; the superintendent of the island can only supply vessels when he has a good stock on hand.

The guano is brought off in small boats, carrying about 3 tons each, the labourers in the boats putting it into baskets or tubs.

Ships ought to be provided with platforms, or they will be liable to strain very much. A brig of 290 tons reg. loaded 450 tons, and if she had had a platform could have taken more. Her hold was one-half full.

Port Charges.—There are no port charges. **Labour** :—Optional; 5 c. per ton, or they may be hired from the superintendent at 2 dols. per day. With two gangs at work, 145 tons per day can be loaded.

PORT-AU-PRINCE.

Port-au-Prince, in lat. 18°32' N., long. 72°25' W., lies at the head of the great western bay of the island.

Population.—About 75,000.

Imports.—Dry goods, hardware, provisions, food stuffs, and wood.

Exports.—Coffee, cotton, cotton seeds, cocoa, logwood, lignum-vitae, hides, honey, etc.

Accommodation.—The harbour is safe, except during the hurri-

Haiti—Port-au-Prince (*continued*).

cane months from August to November, and is capable of accommodating vessels of any size. There is a patent slip, with a cradle 300 ft. long, capable of lifting a vessel of 1,100 tons.

Pilotage.—Compulsory. **Steamers** :—28·34 gourdes and 4·59 dols. inwards, and 21·25 gourdes and 3·44 dols. outwards. **Sailing Vessels** :—From 5·67 gourdes and 0·92 dols. to 22·67 gourdes and 3·89 dols. inwards, and 4·25 gourdes and 0·69 dols. to 17·00 gourdes and 2·75 dols. outwards, according to tonnage.

Port Charges.—**Entrance Fees** (signalling) :—2·84 gourdes and 0·46 dols. **Clearance Fees** :—2 gourdes. **Light Dues** :—6 c. gold per gross ton. **Tonnage Dues** :—2·29 dols. per ton. **Sanitary Visits** :—Steamers from abroad, 35·42 gourdes and 5·73 dols. Sailing vessels coming from another Haitien port, 5 gourdes. From abroad, from 11 gourdes and 1·75 dols. to 22 gourdes and 3·50 dols., according to tonnage. **Mooring** :—5 dols. per ship on private buoy. **Wharfage** :—According to goods imported. **Boat Hire** :—20 gourdes a day or 3 gourdes a trip. **Labour** :—3 gourdes per man per day. **Ballast** :—50 c. gold per ton. **Water Dues** :—Steamer, 10 gourdes ; sailing vessel, from 1 to 5 gourdes according to tonnage.

PORT DE PAIX.

Port de Paix is in lat. 19°58' N., long. 72°50' W.

Population.—10,000.

Imports.—General merchandise.

Exports.—Logwood, coffee, wax, sisal, cedar, skins, and hides.

Accommodation.—Port Paix is a small bay, about $\frac{1}{2}$ a mile wide and a $\frac{1}{4}$ of a mile deep. It affords well-sheltered anchorage, being protected on the N. by Tortuga Island. The holding ground is good, in 12 fathoms with a sand and mud bottom. Ballast is discharged into lighters, but sailing vessels are permitted to throw it overboard outside the west fort ; ballast dues must be paid in any case.

Pilotage.—Compulsory.

Port Charges.—**Tonnage Dues** :—1 dol. 83 $\frac{1}{2}$ c. (Haitien currency), and 25 per cent. gold per ton. **Stevedore** :—Loading logwood, 30 to 35 c. (U.S. gold) per ton. **Labourers** :—On board, 2 dols. (Haitien currency) per day, including food ; 3 dols., not including food. **Lighterage** :—Logwood, 3 dols. (Haitien currency) per ton. **Ballast Dues** :—25 c. per ton. No light dues. **Provisions** :—Meat, 50 to 60 c. (Haitien currency) per lb.

Pro Forma Charges on a steamer discharging and loading cargo per U.S. :—

	Haitien currency.	U.S. gold.
Pilotage in and out, Government charges	11 09	1 15
" " pilot's fee	7 50	—
Harbour-master	3 00	—
Doctor's visit: charges due to Government	22 92	5 73
" " doctor's fee	12 50	—
*Guards for cargo	10 00	—
*Telegrams, stamps, and postage	5 00	—
*Gratuities to Custom House officers	10 00	—
Lighterage of cargo, 1,040 barrels at 8 c.	—	83 20
Carried forward	82 01	90 08

* Generally paid by Consignees.

Haiti—Port de Paix (*continued*).

	Haitien currency.	U.S. gold.
Brought forward	82 01	90 08
Tonnage dues in, 92 tons cargo, at 1 dol. 83½ c. +25 per cent. gold	168 67	42 17
Bill of health, U.S. Consul	—	5 00
Stevedore, stowing by contract 500 tons of logwood at 35 c.	—	175 00
Extra labourers on board for handling cargo, 20 men, 1 day (10 hours), food found	40 00	—
Provisions, 50 lb. of meat at 60 c.	30 00	—
„ vegetables, 1 basket	5 00	—
	325 68	+ 312 25
	=£12 4s. 5d. + £64 4s. 10d. =£76 9s. 3d.	

ST. MARC.

St. Marc, in lat. 19°5' N., long. 72°49' W., is on the W. coast of the island.

Population.—6,000 to 7,000.

Imports.—Provisions, timber, dry goods, and hardware.

Exports.—Cotton, coffee, cottonseed, logwood, beeswax, mahogany, and hides.

Accommodation.—The Bay of St. Marc is open to the west. There is a depth of 5 to 6 fathoms close to the shore. Vessels anchor in from 40 to 50 fathoms. A wharf is now in course of construction, and when completed will be about 100 ft. long and 30 ft. wide, with a depth of water at the end of from 15 to 16 ft. The anchorage is easy.

Pilotage.—Steamers, to pilot, coming in, 11 gourdes, plus 2 dols. 75 c. gold to Government; going out, 6.50 gourdes to pilot; to Government, 11 gourdes gold.

Port Charges.—**Sanitary Visit:**—First port, 22.92 gourdes, plus 5 dols. 73 c. **Doctor's Visit:**—First port, 12.50 gourdes. **Bill of Health:**—5 gourdes. **Tonnage Dues:**—Gold, 1 dol. 83 c., plus 25 per cent. gold. **Passport:**—2 gourdes.

PORTO RICO.

The island of Porto Rico was ceded to the United States by Spain by treaty in 1898. It has an area of 3,435 square miles, and an estimated population of a little over one million. The tariff charges are the same as those imposed at the ports of the United States.

The island has one port of entry, San Juan, and seven sub-ports of entry, viz., Ponce, Mayaguez, Arecibo, Aguadilla, Fajardo, Arroyo, and Humacao. A Customs inspector is stationed at Viéques (Crab Island), but it is not a port of entry. Vessels carrying domestic cargo are permitted to discharge at other than ports of entry, after having properly entered at one of the Custom Houses. For example, a vessel clearing from the United States with cargo for Naguabo would be permitted to discharge at Naguabo after having made proper entry at Humacao.

Harbour Rules and Regulations.—The Executive Council of Porto Rico on March 8, 1907, approved of an Act submitted by the Commissioner of the Interior for the regulation and government of the docks and harbours of the island. The penalties for non-compliance with these regulations are particularly heavy. The following are the most important:—

No one except the pilot to board a vessel prior to the visit of the health officer.

Masters must on arrival report to the Port Captain concerning vessels and cargo, and before leaving report clearance. Between sunset and sunrise boats moving in harbours must show either special white light or regular running lights required by international law. Vessels at anchor to show special lights. Those under 150 ft. in length to carry forward at a height not exceeding 20 ft. a white light; vessels over 150 ft. in length, one white light forward at a height of not less than 20 or more than 40 ft., and one aft at a height not less than 15 ft. lower than the forward light.

Stones, gravel, ballast, cinders, ashes, mud, or any other substance must not be deposited in any harbour. Vessels wishing to unload or load ballast must do so at the anchorage assigned by the Port Captain, and must have a proper chute arranged to prevent the ballast from falling overboard.

Vessels not to anchor within 150 yards of the shore, without the consent of the Port Captain.

The speed on entering or leaving not to exceed six knots per hour.

Masters of vessels having gunpowder or other explosives on board to declare same to Port Captain immediately on arrival, so that special anchorage may be assigned them.

All vessels laden with explosives to display at the foremast head during the daytime a red flag, at least 36 sq. ft., and between sunset and sunrise a red light at the foremast head.

Pilotage.—The Master must under a penalty of 25 dols. give an account to the pilots when boarding of the draught of his vessel. The fees for pilotage have been established as follows:—For every vessel inward or outward bound, and drawing less than 15 ft., one dol. per foot. For every vessel drawing more than 15 ft., 1 dol. 25 c. per foot. For fractions of

Porto Rico.

feet, 6 in. or less not counted, above 6 in. to be considered an additional foot. Half pilotage for shifting berth from one anchorage to the wharf, or vice versa. For shifting berth from one anchorage to another, for each change, 2 dols. 50 c. For shifting from one berth at wharf to another at wharf, 2 dols. 50 c. Night pilotage double the before-mentioned charges; the night counts from one hour after sunset to one hour before sunrise. Vessels not exceeding 100 tons (gross) only pay half rates.

Wharfage Dues.—Vessels of 200 tons or under, 2 c. per day per ton gross; over 200 tons, 2 c. per day per ton for the first 200 tons, and $\frac{3}{4}$ c. per ton for every additional ton. Vessels which do not make fast, but load at anchorage from lighters, the following dues for each day; 200 tons for under, $\frac{1}{2}$ c. per ton; over 200 tons, $\frac{1}{2}$ c. per ton for first 200 tons, and $\frac{1}{4}$ c. per ton for every additional ton.

Vessels of less than 50 tons gross only pay half of the above fees. No wharfage dues charged to vessels calling for coal, water, or provisions necessary for a continuance of their voyage.

Tonnage Dues.—Vessels from United States ports, free; from Europe, 6 c. per net reg. ton; and from the West Indies, South America, and Canada, 3 c. per ton.

Currency, Weights and Measures.—Same as in use in the United States of America.

AGUADILLA.

Aguadilla is in lat. $18^{\circ}26'$ N., long. $67^{\circ}12'$ W., on the N.W. coast of Porto Rico.

Population.—6,422.

Imports.—Provisions, hardware, dry goods, lumber, petroleum, etc.

Exports.—Sugar, tobacco, coffee, maize, hides, molasses, anatto seed, and straw hats.

Accommodation.—Vessels of the largest size can anchor off the town. There is about 4 fathoms of water a cable length from the shore, and 15 fathoms three cable-lengths off. Water and provisions of all kinds can be obtained. Cargo is brought alongside in barges at merchant's expense.

For tonnage, pilotage, and wharfage dues, see **Porto Rico**.

ARECIBO.

Arecibo, in lat. $18^{\circ}28'$ N., long. $66^{\circ}42'$ W., is on the N. coast of Porto Rico.

Population.—8,008.

Accommodation.—This is considered a dangerous port, as it is an open roadstead with bad anchorage, and vessels must be provided with good ground tackle, and at least 75 fathoms of chain. Close inshore there is a stretch of dangerous reefs, providing a constant menace to vessels if the anchor does not hold. During the months of April, May, June, July, August, September, and October it is considered safest, and vessels then venture inside the reef into $3\frac{1}{2}$ to 4 fathoms of water. During the other part of the year the anchorage is outside, about 2 miles off shore, and shipmasters should be ready to slip and proceed to sea at a moment's notice.

Porto Rico—Arecibo (*continued*).

Exports are conveyed from the interior of the island down the Rio Grande de Arecibo in flat-bottomed boats. At the bar of the river the goods are transferred into lighters, and from these to the ocean-going vessels. The port is in direct rail communication with Lares, San Juan, Mayaguez, and Ponce.

Pilotage.—Compulsory except for United States vessels.

For tonnage and pilotage dues, see **Porto Rico**. There are no wharfage charges here.

ARROYO.

Arroyo, in lat. $17^{\circ}58'$ N., long. $65^{\circ}59'$ W., is the port of Guayama, the principal city in the S.E. corner of the island.

Population.—2,137.

Accommodation.—This port, which is marked by a lighthouse on the cape to the S.E. of it, should be approached with great caution, especially at night, as there are dangerous reefs $2\frac{1}{2}$ to 3 miles from shore. The pilots await the arrival of a vessel at the end of the reef. Anchorage in 3 fathoms of water, coral bottom, about a $\frac{1}{4}$ -mile off shore. A nasty swell rolls in at times (June and July especially), and a kedge is necessary aft to keep the ship's head to it. Some shipmasters bend a stout line to their anchors, and haul it tight when the swell sets in, keeping their vessels broadside to the wind.

For tonnage, pilotage, and wharfage dues, see **Porto Rico**.

CRAB ISLAND.

(See **Viéques**, p. 1172.)

FAJARDO.

Fajardo is in lat. $18^{\circ}20'$ N., long. $65^{\circ}39'$ W.

Population.—3,500.

Imports.—Lumber, cooperage utensils, provisions, dry goods, machinery, and hardware.

Exports.—Sugar and molasses.

Accommodation.—There are two entrances, one with a depth of 18 ft., and the other 23 ft. Depth in the harbour, 16 to 23 ft.

Pilotage.—See **Porto Rico**. Pilots cruise off the N.E. point.

Port Charges.—For **Tonnage and Wharfage Dues**, see **Porto Rico**. **Lighterage**:—General cargo: 50 to 60 c. per ton alongside; 50 c. per hhd.; 20 c. per tierce; 10 c. per barrel; molasses, 15 to 20 c. per hhd. stowed empty in hold, and filled afterwards; sugar, 22 to 25 c. per hhd. **Ballast**:—Sand, 1 dol., and stone, 1 dol. 25 c. delivered alongside. **Water**:—1 dol. per puncheon, alongside. **Brokerage**:—Commission on collecting freight, $2\frac{1}{2}$ per cent.; on disbursements, 2 per cent.; on procuring freight 5 per cent. **Provisions**:—Beef, 12 to 15 c. per lb.

GUANICA.

Port Guanica is in lat. $17^{\circ}58'$ N., long. $66^{\circ}58'$ W., on the S. coast of Porto Rico.

Exports.—Sugar, coffee, maize, cotton, and starch.

Accommodation.—Port Guanica is the best harbour on the S.

Porto Rico—Guanica (continued).

of the island. It is an inlet $1\frac{1}{2}$ miles long and $\frac{1}{4}$ mile broad, with a depth of $3\frac{1}{2}$ to $4\frac{3}{4}$ fathoms.

For tonnage, pilotage, and wharfage dues, see **Porto Rico**.

HUMACAO.

Humacao, in lat. $18^{\circ}12'$ N., long. $65^{\circ}48'$ W., is on the E. coast, near Naguabo, on the river of the same name. It is a port of entry.

Population.—4,428.

Imports.—Lumber, jute bags, general merchandise, and machinery.

Exports.—Sugar, molasses, cocoanuts, citrus fruit, cigars, and cattle.

Accommodation.—There is a depth of 21 ft. at high water, and 17 ft. at low water. The anchorage is about 2 miles from the entrance, but the shelter is not good.

Pilotage.—For charges, see **Porto Rico**.

Port Charges.—**Tonnage Dues**:—See **Porto Rico**. **Entrance or Clearance**:—Vessels up to 100 tons, 1 dol. 50 c.; over 100 tons, 2 dol. 50 c. **Boat Hire**:—3 dols. per day. **Labour**:—15 c. per hour during the day, and 15 c. per hour at night. **Survey**:—On vessels under 100 tons net, 1 dol. 50 c.; over 100 tons, 3 dols. Vessels of whatever tonnage with free cargoes or ballast, 67 c. **Post Entry**:—2 dols. Certificate of payment of tonnage dues, foreign vessels, 20 c. **Ballast**:—Sand, 75 c. per ton.

Pro Forma Charges on a steamer of 2,517 tons reg. from Canada, with a general cargo in and ballast out, drawing 18 ft. loaded:—

	Dols.	c.
Harbour dues at 3 c. per reg. ton	75	51
Pilotage inwards, 18 ft. at 1 dol. 25 c. per foot	22	50
„ outwards, 15 ft. at 1 dol. per foot	15	00
Entry	2	50
Clearance	2	50
Survey	3	00
Certificate of payment of tonnage dues	0	20
Labour, four men for four days	24	00

145 21 = £29 17s. 6d.

MAYAGUEZ.

Mayaguez Bay lies on the W. coast of Porto Rico, and is nearly 4 miles wide, and $1\frac{1}{2}$ miles deep. Lat. $18^{\circ}13'$ N., long. $67^{\circ}9'$ W. The town is situated at the head of the bay.

Population.—15,187.

Imports.—Bread-stuffs, provisions, lumber, machinery, agricultural implements, dry goods, hardware, etc.

Exports.—Sugar, molasses, coffee, cocoa, cotton, and fruits (fresh and preserved).

Accommodation.—In the northern part of the bay the depth gradually decreases from 10 to 4 fathoms towards the shore; but a line of shoals runs right across the entrance, which requires great attention in working in. The anchorage affords excellent shelter from northerly winds, and admits vessels of moderate size.

Port Charges.—Entry, 2 dols. 50 c. **Tonnage Dues**:—European ships, with cargo or ballast, 6 c. per ton. West Indian ships with cargo D.C.

Porto Rico—Mayaguez (*continued*).

or ballast, 3 c. per ton. **Survey** :—Ships with cargo less than 100 tons, 1 dol. 50 c. ; ships with cargo more than 100 tons, 3 dols. ; in ballast, 67 c. **Outward Clearance** :—Less than 100 tons, 1 dol. 50 c. ; more than 100 tons, 2 dols. 50 c. **Harbour Dues** :—First, 100 tons gross, $\frac{1}{2}$ c. per day ; addition, 100 tons gross, $\frac{1}{4}$ c. per day. **British Consular Fees** :—Clearance inwards and outwards, 5s. ; endorsing articles, 2s. 6d. ; bill of health, 10s. ; other consular bills of health vary from 2 dols. 50 c. to 6 dols. **Water** :—When taken, per vessel, 2 dols. 50 c. **Lighterage** :—Bulk as per agreement ; for pieces, as per special tariff. Loading by hhd. or cask, $31\frac{1}{4}$ c., loading by barrel, $6\frac{1}{4}$ c., loading by bag, 5 to $6\frac{1}{4}$ c. according to size and weight. **Hose Hire** :—Per cask of molasses run on board, $6\frac{1}{4}$ c. ; per tierce, 4 c. **Ballast** :—Discharging sand per ton, 50 c. ; discharging stone, free. Loading stone, per ton, 1 dol. to 1 dol. 50 c. ; loading sand, per ton, 60 to 75 c. **Labour** :—Labour on board, 1 dol. 75 c. to 2 dols. per day. Stevedores for sugar and molasses, 15 c. per hhd. Lumber, 75 c. per 1,000 ft.

NAGUABO.

Naguabo, in lat. $18^{\circ}13'$ N., long. $65^{\circ}44'$ W., is on the E. coast of the island.

Population.—1,812.

Exports.—Sugar, cattle, etc.

Accommodation.—The town is about 2 miles from the shore. The depth of water is from $4\frac{1}{2}$ to $3\frac{1}{2}$ fathoms, diminishing gradually to the shore, near which there is 2 fathoms. It is an open roadstead, and exposed to winds from S.W. to S.E. The line of railway now (1909) building from Mameyes eastward is to be extended to Naguabo, and another line building, from Caguas to Humacao, will give Naguabo communication with the interior. Vessels with cargo for this port must make entry at Humacao before they will be permitted to discharge.

For tonnage, pilotage, and wharfage dues, see **Porto Rico**.

PUERTO JOBOS.

Puerto Jobos (or Lobos), in lat. $17^{\circ}57'$ N., long. $66^{\circ}6'$ W., is on the S. side of the island, about 7 miles S.W. of Arroyo, where vessels have to enter and clear.

Population.—1,500.

Imports.—Coal and machinery.

Export.—Sugar.

Accommodation.—This is a fine landlocked harbour, with an average depth of 22 ft. ; rise and fall of the tide about $1\frac{1}{2}$ ft. Prevailing winds, S.E. trades. There are no wharves here ; cargoes are discharged by means of lighters. Railway communication with Ponce.

Pilotage.—For rates, see **Porto Rico**.

Port Charges.—**Tonnage and Wharfage Dues.**—See **Porto Rico**. **Ballast** :—As per agreement. **Towage** :—As per agreement.

PUERTO PONCE.

Puerto Ponce is in lat. $17^{\circ}59'$ N., long. $66^{\circ}37'$ W., on the S. coast of Porto Rico.

Porto Rico—Puerto Ponce (*continued*).

Population.—27,952.

Imports.—Provisions, rice, dried and pickled fish, dry goods, coa, and lumber.

Exports.—Coffee, sugar, molasses, hides, cattle, and fruits.

Accommodation.—The bay is 3 miles across, and open to the south. There is a 7 fathom channel leading up to the port, but it should not be taken without a pilot. The anchorage is in 5 fathoms, 6 cables from the shore. Depth at entrance to port at high water, 24 ft. Depth in port at high water, 32 ft.; at low water, 30 ft. Loading and unloading is effected by means of lighters.

Pilotage.—Compulsory for foreign vessels, 1 dol. per foot up to 15 ft.; over 15 ft., 1 dol. 25 c. per foot. Double rates at night.

Port Charges.—**Entry and Clearance Fee**:—5 dols. **Survey** (official fees):—3 dols. **Harbour Dues**:—Up to 200 tons, $\frac{1}{2}$ c. per ton; additional tons, $\frac{1}{4}$ c. per ton, per day, during loading or discharging. **Ballast**:—Discharging, 50 c. per ton. Sand ballast, 75 c. per ton; stone (delivered alongside), 1 dol. 50 c. **Water Dues**:— $\frac{1}{2}$ c. per gallon, filling casks and carrying at the vessel's expense. **American Bill of Health**:—Free. Foreign, according to respective consulates. **British Bill of Health**:—10s. **Loading Lumber**:—In rafts, 1 dol. to 1 dol. 50 c. per raft; in lighters, 1 dol. per 1,000 ft. for spruce white pine; 1 dol. 25 c. per 1,000 ft. for yellow pine. **Hose Hire**:— $6\frac{1}{4}$ c. per cask. **Jack Screw**:—1 dol.

Labour:—Up to 4 p.m. at 20 c. per hour; after 4 p.m., 40 c. per hour; holidays, 40 c. per hour. **Stevedore**:—Sugar, in bags, 3 c. per bag; sugar, in hogsheads, 15 c. per hogshead; sugar, in pockets, 1 c. per pocket; molasses, 15 c. per hogshead; coffee in bags, 3 c. per bag; fruits in boxes, 2 c. per box; in barrels, 3 c. per barrel.

Lighterage:—Provisions, 4 c. per 100 lb.; dry goods, hardware, etc., 8 c. per 100 lb.; fire bricks, 3 dols. per 1,000 bricks; packages or pieces of 2 to 6 tons, 2 dols. 50 c. per ton; packages or pieces of 6 to 10 tons, 3 dols. per ton; packages or pieces of 10 to 14 tons, 3 dols. 50 c. per ton; packages or pieces of 14 to 20 tons, 4 dols. per ton; packages or pieces over 20 tons, 5 dols. per ton. Capacity of lighters in all, about 2,250 tons.

For tonnage and wharfage dues, see **Porto Rico**.

Pro Forma Charges on a steamer of 2,700 net tons reg. (3,000 gross), with a cargo of general merchandise in, drawing 19 ft. loaded, and leaving in ballast, drawing 12 ft., working five days in port:—

	Dols.	c.
Harbour dues at $\frac{1}{4}$ c. per gross ton on first 200 tons; $\frac{1}{4}$ c. per gross ton on balance, per working day	27	50
Pilotage in, 19 ft. at 1 dol. 25 c.; out, 12 ft. at 1 dol.	35	75
Tonnage tax at 6 c. per net ton	162	00
Entrance and clearance fees	5	00
Survey	3	00

233 25 = £48 0s. 0d.

SAN JUAN.

San Juan is on the island of Porto Rico, lat. 18°29' N., long. 66°8' W.

Population.—32,048.

Imports.—Salt fish, meat, timber, butter, machinery, etc.

Exports.—Sugar, molasses, rum, tobacco, cigars, and coffee.

Porto Rico—San Juan (*continued*).

Accommodation.—San Juan is one of the coolest and healthiest ports in the West Indies. The depth at the entrance at high water is 24 ft., there being 22 ft. of water alongside the coal wharf. The harbour is well sheltered, and there are cranes for unloading lighters. Pilots will at once come off on making the usual signal. Vessels ordered for San Juan should always provide themselves with a bill of health from the American Consul at the port of departure. When mooring in the channel the anchors ought to be laid out N.E. and S.W., but in the harbour N. by S. Tugboats can be had, the charges being subject to agreement.

Port Charges.—For tonnage, pilotage, and wharfage dues, see **Porto Rico**. **Discharging Ballast:**—About 1 dol. per 2 tons; taking ballast, 1 dol. 20 c.; ballast guard, 1 dol. **Lighterage:**—Per hhd., 25 c. **Stevedore:**—25 c. **Bill of Health and Manifest:**—65 c. **Custom House Entry and Clearance:**—5 dols. 80 c. **Signal Station:**—60 c. **Labourers:**—15 to 25 c. per hour. **Water:**— $\frac{1}{2}$ c. per gallon. **Provisions:**—Beef 12 $\frac{1}{2}$ c. per lb; vegetables cheap and plentiful.

Pro Forma Charges on a steamer of 2,534 reg. tons, with a cargo of 640 tons:—

	Dols.	c.
Entry and visit	5	70
Pilotage, in and out	66	25
Signal station	0	60
Port charges	43	01
Boat hire	4	50
Tonnage dues	97	62
Consular fees	25	60
Workmen and watchmen	98	85
	342	13

— £70 7s. 10d.

VIÉQUES OR CRAB ISLAND.

Viéques (or Crab Island), in lat. 18°5' N., long. 65°24' W., is S.E. of Porto Rico.

Population.—2,646.

Exports.—Sugar, rum, cattle, and cotton.

Accommodation.—Porto Mulas, on the N. coast, is the principal harbour. It is formed by two reefs, extending about $\frac{3}{4}$ of a mile. It is considered safe for vessels of 16 ft. draught, but shipmasters should exercise great caution in entering. The town is called Isabella II. This is no longer a port of entry, and vessels have to clear at some port in Porto Rico. On the N. side, there is a lighthouse at the entrance of Porto Mulas, showing a red light, and on the S. side of the island, at the entrance of Porto Ferro, there is a lighthouse with a revolving white light. Dane's Bay, on the S. side of the island, has 3 to 4 fathoms, and is considered free from danger. Sound, or Settlement Bay, is 5 miles E. of Vaca Point. Anchorage off Water Bay, about half a mile from the shore, in 4 to 5 fathoms water. Pelican Harbour is protected by a reef running parallel with the shore about $\frac{1}{4}$ mile distant. There are several openings, with 12 ft. water, leading into a good anchorage for coasters.

Pilotage.—Compulsory.

Port Charges.—All charges made in Porto Rico on entering there. **Labour:**—2 dols. per day.

SANTO DOMINGO.

The Republic of Santo Domingo embraces the eastern portion of the island of Haiti, having an area of 18,045 square miles, with a population estimated at 610,000. The trade is of an annual value of a little over two million pounds sterling, made up of imports £856,267, and exports £1,308,774. The chief articles of import are cotton fabrics, iron and steel goods, oil, fish, rice, flour, etc., the principal products being sugar, tobacco, cocoa, coffee, fruit, hides, wax, honey, timber, and various fibres. The means of internal communication are poor, the roads being ill-kept, and the railways few in number and of a very limited mileage. The lines at present open are those that connect Santiago and Puerto Plata and Sanchez and La Vega. The Government are, however, promoting the construction of other lines.

The Republic belongs to the Postal Union, and there is a post and telegraph service, the latter being in the hands of the Antilles Telegraph Company. The island is in communication with the United States and Europe by means of the French Submarine Telegraph Company's cables.

The United States gold dollar is the standard of value, but American gold is at a premium of about 200 per cent. compared with the local silver currency. Shipmasters would effect a considerable saving on disbursements by taking with them either English or United States gold coinage, which they could sell at a premium, and with the proceeds pay their port charges in the currency of the country.

Charges at Ports of the Republic.—Every vessel arriving from abroad at authorized ports of the Republic, or leaving same for abroad, is charged the following dues:—

Tonnage Dues.—50 c. for each ton landed ^{and} or shipped.

Pilotage.—Sailing vessels, 1 c. per reg. ton. Steamers, $\frac{1}{2}$ c. per reg. ton. These dues are payable both on the arrival and departure of vessels, and whether the pilot is taken or not.

Interpreter's Fees.—2 dols. Watchman, 2 dols.

Sanitary Dues.—2 dols.

Vessels putting in for shelter pay no dues, even though they may sell a portion of their cargo to meet their necessary expenses. (Vessels entering and leaving in ballast only pay watchmen and sanitary dues on entering, together with pilotage inwards and outwards.)

Vessels entering in quest of provisions ^{and} or water, for repairs or other such reason, pay sanitary fees and pilotage only, provided that they do not carry out any commercial operation.

All goods forwarded to the Republic of Santo Domingo must be accompanied with an invoice bearing a declaration, signed by the sender, and viséd by the Dominican Consul. Two duplicates must also be delivered to the Consul at the port of departure. Fee, 2 dols.

The above are the legal charges, but shipowners and masters would do well to bear in mind that in this Republic a foreign vessel is always subjected to various unrecognized "dues" or customary backsheesh, of which it is practically impossible to avoid payment.

Santo Domingo.

Important to Shippers.—Shippers to ports in the Dominican Republic should note that the documents to be presented at the Consulate for certification are—

- (a) Four copies of invoices
(b) Two copies of bill of lading
- } for each shipment.

Invoices must contain the following particulars—

Marks, numbers, number of packages, full description of goods and contents, gross and net weights (in kilos.), total value. At the foot of invoice the following declaration must be put and be signed by the firm—

“Declaro que los bultos que figuran en esta factura han sido comprados en Inglaterra para consumo en el territorio de la Republica Dominicana y que el contenido valor y pesos estau correctamente espresados,

Londres.....19

Shippers should note that contents must be correctly described in Spanish, and yards, dozens, pairs, etc. (if any), be stated on the invoice. Great inconvenience will be caused if this is not done, and consignees run risk of goods being confiscated, after being heavily fined for incorrect invoices.

FEES.

Bills of lading are certified free.

		£	s.	d.	
Consular invoices	£4 to £10 value	0	4	0	fee
	£10 „ £80	0	8	0	
	£80 „ £200	0	12	0	
	£200 „ £400	0	16	0	
	£400 „ £800	1	0	0	
					Above £800.
					4s. more for each £200.

Invoices containing medical goods of any description, or arms and ammunition, etc., *will not be certified* unless a *ministerial permit* is produced, as these articles cannot be shipped without the aforesaid permit.

BANI.

Bani, or Agua de la Estancia, in lat. 18°12' N., long. 70°25' W., is about 39 miles W. of San Domingo. This is an open roadstead. It is not a safe port.

BARAHONA.

Barahona is about 38 miles W. of Bani.

There is 12 ft. of water in the inner harbour, and 4 fathoms in the outer. A pilot is necessary and is generally taken from San Domingo. Fresh water can be obtained.

This is not a safe port.

CABARETE.

Cabarete, in lat. 19°40' N., long. 70°20' W., is about 10 miles E. of Puerto de Plata.

Exports.—Mahogany, tobacco, hides, sugar, molasses, etc.

Accommodation.—Vessels of 400 tons can enter and anchor in 3 to 4 fathoms of water, about 2 cable lengths from the shore. The tide rises 3½ ft. The holding ground is not good. Vessels should not attempt to enter at night, and a pilot is necessary.

All vessels have to enter and clear at Puerto de Plata.

For charges, see **Santo Domingo.**

Santo Domingo.

JUAN ESTEVAN.

Juan Estevan, about 6 miles S. of Barahona, is an open roadstead. Vessels load here, but it is not considered safe.

MARCORIS.

Marcoris, in lat. $18^{\circ}30'$ N., long. $69^{\circ}21'$ W., is at the mouth of the river of the same name, about 40 miles E. of San Domingo. Marcoris is the port for an extensive sugar plantation, owned by Americans.

Imports.—Lumber, machinery, shooks, etc.

Exports.—Sugar and molasses.

Accommodation.—The harbour is small, with 14 ft. of water at the entrance and 20 to 22 ft. inside, opposite the warehouse; cargo is taken alongside in lighters.

Pro Forma Charges on a Norwegian steamer :—

	Dols.	c.
Port dues, 1,656, tons at 50 c.	828	40
Pilot, 699 tons reg. at 1 c.	6	99
Permit to load	0	50
Stamp paper	30	00
Translation of store list	2	00
Stevedores, etc. (10,500 bags)	207	00
Custom House officers	35	2½
Bill of health	5	00
Dispatch	6	00

1,121 14 = £230 13s. 9d.

MONTE CRISTI.

Monte Cristi is in lat. $19^{\circ}51'$ N., long. $71^{\circ}42'$ W.

Population.—4,500.

Export.—Logwood.

Accommodation.—The anchorage is good and well sheltered from the trade wind, with smooth water in 5 fathoms, about a mile from the shore.

Pilotage.—12 c. per reg. ton.

Port Charges.—Total port dues, 2 dols. 30 c. per reg ton. **Stevedore** :—25 c. per ton. Other charges, see **Santo Domingo**.

Pro Forma Charges on a British vessel of 687 reg. tons, loading a cargo of 740 tons of logwood :—

	Gold.
Dols. c.	
Pilotage in, at 1 c. per ton	6 87
Harbour-master's visit	4 00
Interpreter	2 00
Sanitary officer	2 00
Out-look	2 00
Port dues, 50 c. per ton of cargo	370 00
Pilotage out, 1 c. per ton	6 87
Stamp paper for port dues	6 00
„ „ for dispatch	4 00
Countersigning dispatch	1 00

404 74 = £83 5s. 6d.

Santo Domingo.**NISAO.**

Nisao is about 30 miles W. of San Domingo. The anchorage is in 7 to 9 fathoms, about 2 miles off shore. This is not a safe port.

PETIT TROU.

Petit Trou, about 80 miles W. of San Domingo, is an open roadstead. This is a very dangerous port, and is not now visited by foreign vessels.

PUERTO DE PLATA.

Puerto de Plata, in lat. $19^{\circ}42'$ N., long. $70^{\circ}47'$ W., is 51 miles W. of Cape Frances Viejo, and 10 miles from Cabarete.

Accommodation.—Vessels drawing 12 ft. anchor about a $\frac{1}{4}$ of a mile from the head of the harbour; those above that draught anchor in 5 fathoms farther out.

This is the port of entry for vessels trading along this part of the coast. Provisions plentiful and cheap; fresh beef, $12\frac{1}{2}$ c. per lb.

For charges, see **Santo Domingo.**

PUNTA CANA.

Punta Cana is situated on the eastern part of the island. This is a very dangerous port, and is not now visited by foreign vessels.

SAMANA.

Samana, or Port Santa Barbara, is in lat. $19^{\circ}11'$ N., long. $69^{\circ}23'$ W.

Accommodation.—The bay is large, and the port good and safe, and can admit vessels of the largest tonnage. Vessels anchor in 4 to 5 fathoms, mud bottom, about 2 cable lengths off the town.

SANCHEZ.

Sanchez, in lat. $19^{\circ}12'$ N., long. $69^{\circ}41'$ W., is the chief port in Samana Bay.

Exports.—Cocoa and tobacco.

Accommodation.—The port is safe and can admit vessels of the largest tonnage. Vessels anchor in 4 to 5 fathoms, mud bottom, about 5 cables from the wharf. There is also good anchorage in Clara Bay, about a mile E. of the town, in 7 to 8 fathoms. The rise and fall of the tide is 2 ft. There is a wharf, belonging to the Samana and Santiago Railway Co., whose line connects the port of Sanchez with La Viga.

Pilotage.—Compulsory. Steamers, $\frac{1}{2}$ c. per reg. ton; sailing vessels 1 c. per reg. ton.

Port Charges.—**Entrance Fees:**—50 c. per ton of cargo. **Clearance:**—50 c. per ton of cargo. **Ballast:**—1 dol. 25 c. per ton alongside. **Labour:**—1 dol. 50 c. per day. Custom House interpreter, look-out, and medical officer, 2 dols. each.

Pro Forma Charges on a steamer of 1,200 tons reg., cargo of 200 tons in, and ballast out:—

Santo Domingo—Sanchez (*continued*).

	Gold Dols.
Harbour dues, 50 c. per ton of cargo	100
Pilotage, in and out	12
Interpreter	2
Doctor	2
Look-out	2
Overtime	16
Custom House dispatch	4
Port	1
Bill of health	4
	<hr/>
	143 = £29 8s. 5d.

SAN DOMINGO.

San Domingo is in lat. 18°30' N., long. 69°55' W.

Population.—About 20,000.

Imports.—Provisions, cutlery, cottons, machinery, tools, etc.

Exports.—Mahogany, lignum-vitæ, fustic, sugar, beeswax, honey, cocoa, hides, logwood, divi-divi, etc.

Accommodation.—The harbour has been impracticable for a considerable time, and vessels are now obliged to anchor in the offing, on bad holding ground, rocky bottom. The depth on the bar is 8 ft. San Domingo is a port of entry.

Port Charges.—See **Santo Domingo**.

ALTO VELA.

Alto Vela, in lat. 17°30' N., long. 71°40' W., is a small island on the S. coast of Santo Domingo, and is not open to foreign trade.

Exports.—Phosphate and guano.

Accommodation.—The island is about $\frac{3}{4}$ of a mile long, and the anchorage is on the S. side, in 6 fathoms of water, about a cable from the shore. There are no mooring buoys, and vessels lie with two anchors out. The landing place is good, and phosphate is brought off in ship's boats by the crew. In consequence of the height of the island, vessels can load with safety on the W. side, even during the hurricane months, the land breeze blowing off the island at night. Fresh water and provisions cannot be had.

Port Charges.—There are no charges at the island, and ships enter and clear at the port of San Domingo, where the tonnage dues, etc., are paid.

A ship of 810 tons reg. took forty-two working days to load 1,400 tons of phosphate, and a vessel of 300 tons reg. loaded a full cargo of 500 tons of guano in three weeks.

SOUTH AMERICA.

ARGENTINA.

The Argentine Republic is composed of 14 provinces and 10 territories, with a large seaboard on the E. coast of S. America. It has a total area of 1,135,840 square miles, and a population in 1902 of 5,022,248, and now of about 6,000,000. The President is the executive authority, the legislative power being in the hands of the National Congress, consisting of a Senate and a House of Deputies.

Commerce.—The value of the trade of the Republic in merchandise only, exclusive of the imports and exports of gold coin, amounts to nearly one hundred and twenty million pounds sterling per annum, the returns for 1907 showing imports £57,172,012, and exports £59,240,874. Customs duties are usually ad valorem, ranging from 5 to 50 per cent. of the value, specific duties being imposed in comparatively few instances. All duties are payable in gold or in paper at the rate fixed daily by the Minister of Finance.

Mercantile Marine.—The shipping registered under the Argentine flag consists of 292 vessels of 96,142 tons, made up of 131 steamers of 55,561 tons, and 161 sailing ships of 40,581 tons.

Internal Communications.—There are some 14,738 miles of railway in use, connecting the capital, Buenos Aires, with the chief commercial centres. Practically all the railway companies may be said to be under British management. The rivers Parana, Rio de la Plata, and Uruguay also form important means of communication. There is an excellent postal, telegraph, and telephone service, and cable communication with all parts of the world.

Currency, Weights and Measures.—Although gold is professedly the standard of value in the Argentine, the actual currency consists chiefly of depreciated paper money, the rate of exchange at which it is accepted in payment of Government charges and harbour dues, etc., being fixed daily by the Minister of Finance. The gold dollar of 100 cents. is valued at nearly 4s., i.e., 5 dols. 4 c. = £1 sterling. The paper dollar is now worth about 1s. 8½d., or 11 dols. 40 c. = £1 sterling. The metric system of weights and measures has been legally established, the following table showing the terms usually employed :—

1 kilogram	= 2·2046 lb. avoirdupois.
1,000 kilograms	= about 1 ton.
1 kilometre	= 0·62138 mile.
1 " square "	= about 4 acres.
1 hectare	= 2·471 acres.
1 litre	= 0·22 gallon.
1 hectolitre	= 22 gallons.
1 " quintal "	= 46 kilos. = 101 lb.
1 " arroba "	= 25 lb.
1 bushel	= 55 lb. = 25 kilos.

The weights of the principal articles of export are as follows : A bale

Argentina.

of wool or sheepskins weighs nearly 1,000 lb. and measures about 41 cubic feet. It stows in 44 cubic feet, allowing for stanchions, masts, dunnage, etc.

A Uruguay bale measures about 50 cubic feet.

Bags of wheat, maize, and linseed are practically the same in point of size, but vary considerably in weight, and stow roughly as follows:—

Wheat	51 cubic feet to the ton
Maize	52 " "
Linseed	62 " "
Bran (pressed)	105 " "

Tallow is shipped in pipes and half-pipes. One pipe measures about 42 cubic feet, and weighs 900 lb.

1,000 salted hides, ox and cow, weigh about	30 tons.
1,000 " " horse " "	18 "
1,000 dry " " " "	9 to 10 "
1,000 " " ox and cow " "	12 "

The latter occupy space of about 40 tons measurement, if not partly employed as broken stowage.

Jerked beef measures about 56 cubic feet to the ton, and cases of meat about 55 cubic feet to the ton.

Quebracho Wood.—The stowage of this cargo has greatly improved of late owing to the wood being cut in straighter lengths. Whereas formerly it used to measure 80 to 90 ft., it now runs about 60 to 65 ft. to the ton.

Freights for English and northern ports are paid per ton of 2,240 lb. weight, or 40 cubic feet measurement; for French and Belgian ports, per 1,015 kilos. or one cubic metre; Italian and Spanish ports per 1,000 kilos. or one cubic metre.

The chief bank in the Argentine Republic is the Banco de la Nacion Argentina. There are many other banks, the majority of which have London offices or agencies.

Government Dues.—The following Government dues are payable in all Argentine ports by steamers and sailing vessels arriving with cargo:—

Light Dues:—Punta Indio and Banco Chico together, 7 c. gold per register ton. **Health Dues:**—Vessels with clean bill of health, 1 c. gold per register ton. Vessels with foul bill of health, 3 c. gold per register ton.

Bill of Health:—Steamers and sailers of all sizes, 6 dols. paper. **Consular Fees:**—According to vessel's nationality, tonnage, and port or ports of destination.

Stamped Paper:—The manifest and store-list must be translated into Spanish and presented at the Customs, bearing for steamers an official stamp (for the first sheet) of the value of 100 dols. paper. For each subsequent sheet required, 1 dol. paper.

For sailing vessels of over 500 tons register the stamps required for giving entry amount (for the first sheet) to 55 dols. paper. For each additional sheet, 1 dol. paper.

Crew list, 2 dols. paper. Vessels arriving in ballast require stamped paper for entry of half the value of that necessary when arriving with cargo, and pay for light dues, instead of gold, 7 c., only 3½ c.; besides one-half of the usual health dues.

Stamped Paper:—Steamers with packet privileges require no special permit for taking in cargo, and, on clearing, only present a statement of goods taken on board written on stamped paper of the value of 25 dols. paper.

Sailing vessels leaving in ballast are only charged 1 dol. paper. When loading, a special permit called "opening register" must be taken out, which costs 55 dols. paper.

When clearing with cargo or

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"closing register," the stamped paper required amounts to 50 dols. paper. Cargo steamers pay for packet privileges, 200 dols. paper. Passenger steamers, provided with disinfecting stoves, for each voyage, 100 dols. paper; besides stamped paper in both cases, 3 dols. paper. Steamers that have paid 100 dols. for inward manifest, or sailing vessels that have paid 55 dols. for same in any Argentine port, have only to pay 3 dols. paper, for the first, and 1 dol. for each additional sheet of stamped paper in all other Argentine ports where they may discharge cargo. **Anchorage Dues** :—Payable by all vessels that arrive in an Argentine port, Buenos Aires alone excepted, 1 c. paper per register ton.

Customs Regulations.—According to the existing regulations of the Custom House, vessels may be dispatched direct with cargo or in ballast to the following Argentine ports which possess what are termed first-class Custom Houses : Buenos Aires, La Plata, Bahía Blanca, Chubut. In the Uruguay River : Gualaguaychú, Concepción del Uruguay, Colón, Concordia, Monte Caseros, Paso de los Libres, and Santo Tomé. In the Parana River : Gualaguay, San Nicolás, Rosario, Santa Fé, Paraná, Goya, Corrientes, Formosa, and Posadas. The regulations of the public health department, however, limit the number of ports for which vessels with clean bills of health may be dispatched, or when proceeding from countries where there is no epidemic, to the following : Buenos Aires, Bahía Blanca, La Plata, San Nicolás, Rosario, and Santa Fé. The captains of vessels in foreign ports bound for those of the Argentine Republic must have legalized by the Argentine Consuls the manifests of their cargoes, which must specify the marks, numbers, sorts, and quantity of the packages, with their contents, as far as possible, and the names of their consignees. The Consul will affix his *visé* to the manifest, after having compared it with the bills of lading of the cargo, mentioning in the formula of the legalization the number of bills of lading comprised in the manifest. If the captain is bound for several ports of the Republic, he must have as many manifests as he is to touch at places with his cargo, and the Consul will *visa* them separately in the form mentioned above. Vessels sent in ballast to the ports of the Republic must make a declaration to that effect to the Consul, and obtain a certificate, which he will deliver to them. Vessels coming from a port at which there is no Argentine Consul must be provided with a Customs manifest, declaring at least the number of packages forming the cargo; and, if they call at an intermediate port at which there is a Consul, they must have their manifests legalized in the stated form even though there should be no operation of landing or shipping cargo.

General Regulations.—Rat Guards :—The law obliges ship to use these on gangways connecting vessels with the shore, and a fine is exacted for non-compliance with this regulation. **Agency Commission** :—Steamers arriving with general cargo pay agent's commission on the amount of freight for attending to inward business, when nothing is stipulated to the contrary in charter-party, in addition to 50 dols. gold for giving entry at Customs.

Quarantine :—In times of quarantine vessels are compelled to call at Buenos Aires to pass the medical inspection before proceeding to any other Argentine port. Vessels perform quarantine in the outer roads under the surveillance of an Argentine man-of-war. Steamers as well as sailing vessels may remain in the outer roads for eight days without payment of port

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charges; they are, however, collected at the first port where loading or discharging is effected. Vessels remaining more than eight days must be entered at the Customs, and pay light and health dues. Passengers suffering from contagious diseases are transferred to a floating lazaretto, the rest being sent to quarantine on the island of Martin Garcia.

Immigration Regulations.—All vessels arriving from foreign ports conveying not less than 40 second and third-class passengers will be considered immigrant ships, and entitled to “packet privileges” to facilitate their entrance and clearance, loading and discharging, etc.

Such vessels will be subject to inspection on arrival, as to proper accommodation of immigrants, treatment, etc.

Captains will be liable to fines not exceeding £20 sterling for conveying as immigrants persons over sixty years of age, not being heads of families, also fugitive criminals, idiots, and any one incapacitated for work or suffering from contagious disease.

Space.—The number of immigrants to be carried by each ship will be calculated on the basis of the reg. tonnage, the proportion being one person to every 2 tons reg., children of from one to eight years of age being entitled to a half space, those of under one year of age not being reckoned. Every passenger will be entitled to occupy 1·30 square metres of space should the height of the deck be 2·28 metres; 1·33 square metres should the height be 1·83 metres; and to 1·49 square metres should it be 1·66 metres. The space between decks must be at least 1·66 metres high, and must invariably be kept free of all encumbrances so as to allow passengers free egress and exit to their quarters. The beds provided for immigrants must be at least 1·83 metres long on the inside by ·50 metres wide, two rows only being allowed in any one cabin. Every immigrant ship must be provided with ventilators, pumps, galleys, life-boats, life belts, and such other appliances as may be necessary for the security and convenience of passengers. Such ships must also carry a fully qualified doctor and dispenser, and must also be provided with all requisite drugs, etc. If the number of passengers carried be less than she can accommodate, in accordance with the reg. tonnage scale referred to above, the unoccupied space may be chartered for the transport of provisions, luggage, or merchandise, provided that such cargo shall not be of a dangerous character, or such as is likely to interfere with the health, comfort, and convenience of the passengers. It is strictly forbidden to carry powder, petrol, matches, guano, inflammable materials, fresh provisions, animals, or vegetables in such unoccupied space. Should any infectious disease break out during the voyage, the captain must, immediately upon arrival at any port of the Republic, notify the health officer, and he must prevent the approach of all boats, or the landing of any passengers until authorized to do so by the port authority.

BAHIA BLANCA.

Bahia Blanca, in lat. 38°49' S., long. 62°17' W., is in the province of Buenos Aires.

Population.—37,750.

Imports.—Coal, lumber, roofing, wire, railway material, etc.

Argentina—Bahia Blanca (*continued*).

Exports.—Wool, sheepskins, hair, wheat, and other cereals.

Accommodation.—There is a depth in the channel of 26 ft. at high water springs, 16 ft. at low water springs, 22 ft. at high water neaps, 12 ft. at low water neaps, and alongside wharves of 16 ft. at neaps. Vessels bound for this port should use the Admiralty Chart No. 1,331, and, after making No. 1 buoy, the entrance is easy. The outer harbour is called Port Belgrano, where the Government have constructed a military port, but it is now likely that this will be used as a commercial port. One of the characteristics of this place is the prevalence of high winds, usually from the N.

There are several wharves here, the Great Southern Railway having commodious wharves about half a mile above the entrance to the Naposta Grande, and the Buenos Aires and Pacific Railway Co., Bahia Blanca Division, having one fitted with electric cranes and all modern appliances situated about $2\frac{1}{2}$ miles higher up the estuary than the Southern Railway wharves. There is also a wharf at Sansinena freezing factory, Cuatrerros, where ocean-going vessels load produce. The channel is navigable to the latter point for vessels drawing 22 ft. The minimum depth of water at the Southern and B.A. Pacific Railway Companies' wharves is 23 to 25 ft. The dry dock is 728 ft. long over all, 85 ft. wide at the entrance at the high spring level, and $32\frac{3}{4}$ ft. on the sill at high springs. The dock is divided into three parts and is entered from the tidal basin. There is a lightship at the entrance to the estuary at Port Belgrano. Loading facilities, 1,000 to 1,200 tons per day. There are over fifty 30-cwt. cranes; one 20-ton; two 10-ton; two 5-ton and six 3-ton cranes. There are floating elevators and band grain conveyers for loading corn. Bahia Blanca is an important railway terminus.

Port Extensions.—The Great Southern Railway's new mole is in course of construction. The depth of water at this mole will be 26 ft. at low water. It is situated on the east side of the steel mole and runs nearly north and south. There will be accommodation for eight ocean-going steamers. The mole will be fitted with two grain elevators worked entirely by electricity, the elevators being 185 ft. in length and 88 ft. in width, and provided with telescopic shoots, seven on each side of each elevator, these shoots being arranged at different levels, so that ships can be loaded at any state of the tide whether on the first or second berth. The maximum capacity of each elevator will be 1,500 tons per hour, or say 750 tons per hour on each side. Loading at this rate will be practically impossible, except when loading directly out of the storage of the elevators themselves, the storage capacity of each elevator being 8,000 tons grain in bulk and 5,000 tons of grain in bags. This mole will be used entirely for loading grain.

The Pacific Railway Company's New Extensions are being rapidly pushed on. The depth of water at some of the berths will be 30 ft. at low tide, the whole of the new work being carried out in concrete. One or two of the new berths will be used exclusively for loading grain, also by means of elevators.

Pilotage.—Compulsory. Steamers, from 60 to 120 dols.; sailing vessels, from 25 to 80 dols. gold.

Port Charges.—**Mooring** :—10 dols. gold per shift. **Wharfage** :—1 c. gold per reg. ton per day. **Entrance Fees** :—Steamers, 100 dols. gold sailing vessels, 50 dols. gold. **Clearance Fees** :—Steamers, 50 dols. gold

Argentina—Bahia Blanca (continued).

sailing vessels, 25 dols. gold. **Boat Hire** :—5 dols. gold for running lines.
Consular Fees :—From 30s. to £4. **Light Dues** :—Lights, buoys, and sanitary dues, 7 c. gold per reg. ton. **Ballast** :—2 dols. gold per ton. **Labour** :—4 dols. 50 c. to 5 dols. paper per day of 8 hours. **Brokerage** :—Steamers, 4 per cent.; sailing vessels, 5 per cent. **Anchorage Dues** :—1 c. gold per reg. ton. **Packet Privilege** :—200 dols. paper. **Stamped Paper** :—100 dols. paper.

Pro Forma Charges on a barque of 1,559 tons net reg., with a cargo of lumber in and wheat out :—

	Paper. Dols. c.	Gold. Dols. c.
Customs stamped paper for entry	100 00	—
Consular certificate for entry	10 00	—
Customs certificate of complete discharge	5 00	—
Anchorage dues	—	15 50
Lights, buoys, and sanitary dues, at 7 c. per reg. ton	—	109 13
Pilotage, inward	—	50 00
„ to sea, outward	—	85 00
Towage, inward	—	61 00
„ shifting	—	40 00
„ to Punta Pipa	—	30 50
Wharfage (Southern Railway Co.), three days	—	46 77
Opening register to load, Customs fee	50 00	—
Closing register „ „	50 00	—
Guia referencia „ „	50 00	—
Relación	50 00	—
Crew list, Argentine	2 00	—
Bill of health, British	6 00	—
„ „ Argentine	5 00	—
3 per cent. brokerage on charter, 2,553 tons at 16s. .	—	308 81
Government stamps on charter	—	2 50
Agency fee	—	50 00
Petties with master	25 80	—
Cash to master for cablegram	33 67	—
Exchange at '44 discount	387 47	= 170 49
		<u>969 70 = £192 8s. 6d.</u>

Pro Forma Charges on a steamer of 1,935 tons net reg. :—

	Paper. Dols. c.	Gold. Dols. c.
Stamped paper, customs entry	55 00	—
Stamps, berth note	6 82	—
Pilotage, shifting and mooring	—	50 00
„ to sea	—	90 00
Stevedore, 4,728 tons at 14 c. (wheat)	—	661 92
„ winchmen extra	13 50	—
Wharfage, Buenos Aires & Pacific Railway Co.	—	77 40
„ Southern Railway Co.	—	407 40
Provisions	310 66	—
Medical attendance	95 50	—
Telegrams	17 92	—
Cablegram, sailing	10 00	—
British Consulate fees	9 00	—
Spanish Consulate bill of health (for orders, Las Palmas)	13 65	—
Capitania, Argentine	5 00	—
Brokerage, 4 per cent. on £2,906 4s. 11d., £116 4s. 11d. .	—	585 86
Agency fee	—	100 00
Agency petties, coach hire, postages, etc.	32 50	—
Exchange at '44 discount	569 55	= 250 60
		<u>2,223 18 = £441 2s. 4d.</u>

Argentina—Bahia Blanca (*continued*).

Pro Forma Charges on a steamer of 1,935 tons net reg., ballast in and cargo of wheat out, drawing 22 ft. loaded :—

	Gold. Dols. c.	
Harbour dues at 7 c. per reg. ton (lights, buoys, sanitary, anchorage)	135	45
Brokerage, 4 per cent. on £2,906 4s. 11d.	585	88
Pilotage, in and out, 230 dols. (three shifts)	230	00
Boat hire, running lines, 15 dols.	15	00
Wharfage, 25 days	484	80
Stevedore, 4,728 tons at 14 c.	661	92
Stamped paper	40	00
Telegrams	20	00
Consular fees	6	00

2.179 05 = £432 6s. 8d.

BUENOS AIRES.

Buenos Aires, in lat. 34°40' S., long. 58°25' W., stands on the right bank of the estuary of the Rio de la Plata. Distance by sea from Liverpool, 6,210 miles.

Population.—1,129,286.

Imports.—Manufactured goods, cottons, earthenware, gunpowder, hardware, cutlery, iron, leather, linens, oils, woollens, coal, lumber, etc.

Exports.—Wheat, maize, linseed, flour, frozen meat, quebracho wood, live cattle and sheep, hay, bones, copper (unwrought), grease, horse hair, hides, horns, skins of various kinds, tallow, wool, etc.

Accommodation.—There are two entrance channels—the south, about 11 miles long, varies in depth from 17 to 22 ft.; the north, 20 to 25 ft. deep. Both channels are about 320 ft. wide at their entrances, and are marked by buoys 550 yards apart. The Riachuelo channel is the most used as it affords access to the docks and to the river mouth, known as the Boca del Riachuelo, in which latter is large space for skipping and facilities for loading and discharging cargoes. The docks run in a straight line, N. and S., and can either be entered through the Riachuelo channel from the S. basin, or by a channel which gives direct entrance from the La Plata river to the N. basin.

Boca del Riachuelo.—Outer Port.—Length, 450 yards; mean width, 265 yards; water area, 24 $\frac{3}{4}$ acres. Length of quayage, 450 yards. Inner Canal :—Length, 4,316 yards; mean width, 92 yards; water area, 75 acres; mean depth at ordinary tides, 19 ft.; length of quayage, 4,316 yards. There is one hydraulic fixed crane to lift 10 tons.

Ribera Sud (Boca) Mole (Buenos Aires Great Southern Railway Co.).—Length of quayage, 1,410 ft.; depth of water, 18 to 22 ft., according to wind and tide. There is accommodation for four ocean-going vessels of between 4,000 and 5,000 tons capacity at one time, besides three or four lighters.

Wharf (Great Southern Railway).—Length, 1,500 ft.; depth alongside according to the state of the river, 16 to 22 ft. There are six crane to lift 5 tons. A canal from the interior, 2 $\frac{1}{2}$ miles long and 12 ft. deep will run into the outer harbour; but the execution of this work is suspended.

South Basin :—Water area, 35 acres; length of basin, 3,608 ft.; width of basin, 328 ft.; length of quayage, 3,870 ft.; width of entrance, 328 ft. depth of water at the entrance at high water, 26 ft.; at low water, 21 ft.

Argentina—Buenos Aires (continued).

There are fifteen hydraulic cranes to lift 30 cwt., capable of discharging 40 tons each per hour.

Dock Sud (Buenos Aires Southern Dock Co.).—Width of entrance 148 ft.; width of dock, 295 ft.; length of dock, 3,036 ft.; depth at low water, 25 ft.; minimum size of turning basin at south end, 787 by 647 ft.; total available length of quays, 6,903 ft. There are five grain and wool sheds having in all a total floor area of 100,000 sq. ft., with steel framing, corrugated iron roof and sides, and concrete floors. These sheds are on the east quay. The dock and sheds are equipped with cranes, capstans, and conveyors, all operated by electricity. There is direct connection with the Buenos Aires Great Southern Railway system, and railway communication with all parts of the republic.

There are two 3-ton and eight 30-cwt. electric cranes on the west (export) quay, and one 30-ton, three 10-ton, four 5-ton, six 3-ton, and six $1\frac{1}{2}$ -ton electric cranes on the east (import) quay; six elevator belts and six bridge belts in the grain sheds; six elevator belts alongside the quay.

Docks.—

Docks.	No. 1.	No. 2.	No. 3.	No. 4.
Water area	23 acres	23 acres	27 acres	25 acres
Length of dock	1,870 feet	1,870 feet	2,263 feet	2,067 feet
Width of dock	525 "	525 "	525 "	525 "
Length of quays	4,658 "	4,658 "	5,446 "	5,050 "
Width of entrance	66 ft. from South Basin	66 ft. from No. 1	66 ft. from No. 2	82 ft. from North Basin
Depth at low water	21 ft. 4 in. on sill, 23 ft. 9 in. in dock	23 ft. 9 in. in dock	23 ft. 9 in. in dock	22 ft. on sill, 23 ft. 9 in. in dock

No. 1 dock has one hydraulic crane to lift 5 tons, and twenty hydraulic cranes to lift $1\frac{1}{2}$ tons.

No. 2 dock has thirteen hydraulic cranes to lift $1\frac{1}{2}$ tons, and one to lift 5 tons.

No. 3 dock has thirteen hydraulic cranes to lift $1\frac{1}{2}$ tons.

No. 4 dock has thirteen hydraulic cranes to lift $1\frac{1}{2}$ tons.

North Basin.—Water area, 41 acres; length of basin, 1,213 ft.; width of basin, 1,279 ft.; length of quays, 4,984 ft.; width of entrance, 328 ft.; depth at entrance at ordinary tides, high water, 26 ft.; low water, 21 ft. There is one hydraulic crane to lift 30 tons, and five hydraulic cranes to lift $1\frac{1}{2}$ tons.

At Buenos Aires there are three floating cranes to lift 50, 30, and 20 tons respectively.

There are two graving docks, the floors of which rise 1 ft. in 300. The sills are nearly flat, and about 48 ft. in width. Ships drawing 23 and 24 ft. can be docked, but are liable to delay, as the requisite depth only occurs once or twice a month. There is a patent slip with a lifting power of 600 tons. Ordinary repairs can be carried out by one of the shipbuilding firms.

General Regulations.—A decree has been issued by the Argentine Government, requiring all vessels bound for Buenos Aires to enter the docks, and there discharge or load; or if unable to do so on account of their draught of water, they must proceed to the port of La Plata, a dis-

Argentina—Buenos Aires (*continued*).

tance of 40 miles. All loading and unloading operations in the open roadstead of Buenos Aires are to cease.

All kinds of supplies, including coal, are at a very high price. Fresh water tanks are filled from the river. Vessels arriving from foreign ports must anchor in the outer roads of Buenos Aires, and there await the health visit, before entering either La Plata port or the docks. The health visit is passed from sunrise to sunset, and, if free pratique is given, vessels can then enter either port; but, if quarantine should be imposed, they are obliged to remain in the outer roads and pass the term there, during which no cargo operation or communication is permitted.

Vessels entering the docks or La Plata must do so under the charge of a port pilot, and it is also necessary to employ tugs in order to keep the vessel in the centre of the canal to avoid grounding on the banks, and to assist in turning her.

Steamers with cargo for Barracas, where heavy draught vessels do not go, moor alongside the wharves in the Darsenas or docks, and discharge direct into Customs dépôts, or lighters. Vessels conveying explosives and inflammables must proceed to La Plata to discharge them, as no vessel is allowed to keep them on board at Buenos Aires.

It is certainly preferable that steamers bringing cargo for Buenos Aires, and which in view of their draught can enter and leave these docks without delay, should do so rather than discharge it at La Plata, as in this case the goods are placed direct into warehouses at the port for which they are destined; but for large steamers drawing over 20 ft. there is invariably delay and considerable risk on entering and leaving, on account of the danger of collision in the entrance channel: all being left in the hands of irresponsible pilots and to the judgment of the masters of vessels. To avoid collision, steamers and ships are frequently run on to the sides of the canal, and have to be lightened to get off at very heavy expense.

There is accommodation for any number of steamers in these docks, and any quantity of cargo can be received, but, owing to the dilatoriness of the Customs officials and labourers, the work is not carried on with such dispatch as is desirable. All cargo discharged in these docks is subject to a charge of 50 c. paper per ton for the use of hydraulic cranes for discharging from ships into warehouse, or into wagons, and, as at La Plata, this charge is for account of consignees of goods.

For tallying cargo, delivering to Customs, and obtaining receipts for the same in due form, special clerks can be obtained for the purpose from firms who undertake this business, at a charge of 20 c. paper per ton, as at La Plata.

Only steamers are allowed to enter and make use of the docks, except under very special circumstances, and the Boca and Riachuelo is used exclusively by sailing vessels, with the exception of those steamers bringing coal for the dépôts on the Riachuelo, or with materials for the railways etc.

Steamers unable to enter the docks for want of water or other circumstances, and discharging ^{and} loading in the Buenos Aires roads, pay the same dues as if those operations were performed in dock. Masters of vessels should be very particular to have manifest with *visé* of Argentine Consul at their port of departure. Forty-eight hours are allowed for corrections after arrival. The store-list must be very exact; all slops, etc.

Argentina—Buenos Aires (continued).

particularised articles intended for possible sale by the captain, should appear on the manifest.

Time Signals.—Chronometers can be checked. A red cyclinder is hoisted on the roof of the Hydrographic Office in the northern part of the entrance channel to the North Basin at 0 h. 57 m. 0 s. p.m. and dropped at 1 h. 0 m. 0 s. mean time of the meridian of Cordoba (official time), corresponding to 5 h. 16 m. 48.2 s. Greenwich mean time, and 1 h. 23 m. 19.7 s. local mean time.

Pilotage.—A private association of port pilots has adopted the following tariff :—

STEAMERS.

From the outer roads to the Riachuelo and docks, or vice versa (rates in paper dols.) :—

Not exceeding 500 tons register . . .	15 dols.	Each shift . . .	5 dols.
“ 1,000 “ “ . . .	20 “	“ “ . . .	6 “
“ 1,500 “ “ . . .	25 “	“ “ . . .	7 “
“ 2,000 “ “ . . .	30 “	“ “ . . .	8 “
“ 2,500 “ “ . . .	35 “	“ “ . . .	10 “
“ 3,000 “ “ . . .	40 “	“ “ . . .	12 “

SAILING SHIPS :—Docks, or vice versa.

	South Darsena Boca.	Dock No. 1.	Dock No. 2.	Dock No. 3.	Dock No. 4.	North Darsena.
	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
Not exceeding 500 tons register . . .	15	17	19	21	23	25
“ 1,000 “ “ . . .	20	22	24	26	28	30
“ 1,500 “ “ . . .	25	27	29	31	33	35
“ 2,000 “ “ . . .	30	32	34	36	38	40
“ 2,500 “ “ . . .	35	37	39	41	43	45
“ 3,000 “ “ . . .	40	42	44	46	48	50

The Riachuelo, or vice versa.

	1st Section, Great Southern Railway.	2nd Section, up to Badaraco.	3rd Section, up to 3 Esquinas.	4th Section, up to Great Southern Railway Bridge.
	Dols.	Dols.	Dols.	Dols.
Not exceeding 500 tons register . . .	15	17	21	25
“ 1,000 “ “ . . .	20	22	26	30
“ 1,500 “ “ . . .	25	27	31	35
“ 2,000 “ “ . . .	30	32	36	40
“ 2,500 “ “ . . .	35	37	41	45
“ 3,000 “ “ . . .	40	42	46	50

The above tariff rates are arranged on the supposition that vessels enter the docks by the South Channel; the rates must be inverted in the case of vessels entering by the North Channel.

Vessels proceeding to the Riachuelo by the North Channel, owing to *force majeure*, are subject to an additional charge amounting to 50 per cent. over the above tariff.

SHIFTING BERTHS.

When once a vessel has been moored within the port, any shift made is charged for extra according to the tariff. The charges laid down for shifting berths only hold good when such shifts are made between the

Argentina—Buenos Aires (continued).

Boca and docks, or Boca and Barracas. Shifts to and from the graving docks are charged double, as also are shifts from the docks to the Riachuelo, or vice versa. Shifts from one berth to another in the same dock, or from one side of a dock to the other, are charged at the rate of 5 dols. If vessels are unable to proceed to their destination, owing to want of water on entering or leaving port, shifting position, or the lateness of the hour, the charge for pilotage remains unchanged, and the tariff rates are adhered to. The same rule applies to vessels shifting position for loading or discharging, making good repairs, or taking in ballast. Pilots and tugs are usually sent alongside by the inward agents in order to bring vessels to the docks of Buenos Aires, to the Boca del Riachuelo, Barracas, or La Plata, where discharge can be commenced without delay, provided packet privileges have been taken out and the vessel has been duly entered at the Customs.

STEAMERS.

The tariff for Buenos Aires is based on the assumption that steamers enter and leave by the South Channel, and the numbers of the docks are considered as reversed when steamers make use of the North Channel.

In the port of Buenos Aires, boats for mooring purposes are included in the tariff. In both ports (Buenos Aires and La Plata) all shifts, after the steamer is once moored, are charged extra.

Steamers entering dry dock pay the equivalent to two sections, in addition to the shift, when towed from the docks. Steamers, whether owing to damages to machinery or otherwise, which do not make use of their own steam for navigating in the channels between the roads and the Madero port, pay double tariff. The tariff is charged on steamer's maximum draught, whether it be on entering or leaving. The tug boat companies repudiate all liability attaching to grounding, collision, or damages of any kind whatsoever. Steam launches for service to the outer roads (not exceeding six hours), 30 dols. gold.

Vessels in both ports pay extra for all shifts after having once been moored; these extra charges being made without prejudicing the right of the companies to demand the full tariff rate from the roads to the vessel's final discharging berth.

Graving Docks.—The charges for the use of the graving docks are as follows :—

ENTRANCE DUES.

	Dols.	c.
For the first 500 tons register	50	00 gold.
For each 250 tons register in excess	10	00 „

DOCK DUES.

		PER DAY AND PER TON.	
		First days.	Subsequent day.
		Dols. c.	Dols. c.
On the first	500 tons register	0 18 gold	0 09 gold.
„ „ next	250 „ „	0 16 „	0 08 „
„ „ „	250 „ „	0 14 „	0 07 „
„ „ „	250 „ „	0 12 „	0 06 „
„ Exceeding 1,250	„ „	0 10 „	0 05 „

Fractions of a ton are counted as a ton, and vessels of under 500 tons reg. pay the dues chargeable on a vessel of 500 tons. Work can be done at night by an extra payment of 4 c. gold per reg. ton per night. Fractions of a day are counted as a whole day for the purpose of calculating these dues.

Port Charges.—Light Dues :—7 c. gold per reg. ton ; $3\frac{1}{2}$ c. gold

Argentina—Buenos Aires (continued).

per reg. ton if a vessel comes in ballast. **Health Dues** :—1 c. gold per reg. ton, $\frac{1}{2}$ c. gold per reg. ton if a vessel comes in ballast; 3 c. gold per reg. ton if a vessel comes from an infected port, or does not present a clean bill of health; $1\frac{1}{2}$ c. gold per reg. ton if a vessel comes in ballast under the same circumstances.

Entrance Dues :—15 c. gold per reg. ton; 2 c. gold coming from up rivers if previously in the port of Buenos Aires. **Wharfage or Permanency Dues** :—15 c. gold per 10 reg. tons, or fraction thereof, per day; 10 c. gold per 10 reg. tons, or fraction thereof, per day, if moored outside another vessel or obliquely to the wharf; 5 c. gold per 10 reg. tons or fraction thereof per day if put back to repair, or if moored outside another vessel, and doing no work; 5 c. gold if working from lighters only. Nothing is paid if a vessel puts back by reason of *force majeure*, or is detained in dock for want of water or bad state of the weather, but if a vessel is drawing over 24 ft. no allowance is made for detention through *force majeure*.

Towage :—There are two towage companies in Buenos Aires. Charges as per tariff. Tugs can be ordered from either company.

TARIFF (IN DOLLARS) FOR TOWAGE OF STEAMERS FROM 2,001 TO 2,500 TONS REGISTER.

Payable, plus 10 per cent. in Argentine gold. Entering and Sailing only.

BUENOS AIRES.												LA PLATA.											
Sec.	Via North Channel. to	Via South Channel. to	Draught in Feet.										To	Draught in Feet.									
			19	20	21	22	23	24	25	26	27	19		20	21	22	23	24	25	26	27		
A	North Basin	Boca . . .	\$ 55	\$ 60	\$ 65	\$ 70	\$ 75	\$ 80	\$ 85	\$ 90	\$ 95	Wharfs and Deposits— Rio Santiago	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
B	Dock No. 4	South Basin South Dock	65	70	75	80	85	90	95	100	105		50	55	60	65	70	75	80	85	90		
C	Dock No. 3 (Dry Dock)	Dock No. 1	75	80	85	90	95	100	105	110	115												
D	Dock No. 2	Dock No. 2	85	90	95	100	105	110	115	120	125	Inter- mediate Channel	55	60	65	70	75	80	85	90	95		
E	Dock No. 1	Dock No. 3	95	100	105	110	115	120	125	130	135												
F	South Basin	Dock No. 4	105	110	115	120	125	130	135	140	145	Grand Dock Naval Station	60	65	70	75	80	85	90	95	100		
	Boca	North Basin	115	120	125	130	135	140	145	150	155												

Wharves, warehouses, and depôts contained in the various sections: **A**—Boca Coastguard's house, deposit of inflammable goods, workshops ex-Platense. **B**—South dock, Boca Square, Government Works, Great Southern Railway's wharf (Boca), Morea Mendizabal, Tomás Drysdale & Co., Juan y José Drysdale & Co. **C**—J. J. Drysdale, Peters Hnos., A. Descours Cabaud & Co., Taller Veloz, Taller Mihanovich, Juan y José Drysdale & Co. (Bis), J. Rizzi, Lozano Ballester, Carraro, Craviotto Hnos., Pitre Hno., John Wright, J. F. Macadam & Co. **D**—J. F. Macadam & Co., Carafí & Cámara, Gotusso, A. Lucic, Dellazoppa & Co., Morea, Mendizabal, F. H. Lenders, Merlenster & Co., Lumber Market, A. Mantelos, Evans Thornton, German Coal Depôt, Pablo Cichero, Viuda de Merlo, H. B. Elliot, Duché, Cardiff Coaling Co., Barraca Peña. **E**—A. Spinetto, Worms Deposit, Solari y Gallino, Balcarea, River Plate Coaling Station, Britannia, "La Blanca" Frigorific Anglo-Argentine Mills, J. Bell & Hijos, Barraca Gratry, J. Bell & Sons, Juan Shaw & Hijos, San Marten, A. de Bary, Barraca Bremen, Andrés Spinetto, Fircol, F. Ctibor. **F**—Barracas Coast House Gaurds, Baggot, J. V. Gagliolo, Barraca Puerto, Fabrico Papel, Barracas Las Palmas, Rivera, F. W. Lenders, Chrisa, Selasco, Privilegio, Desplanques, Bush, Central Produce Market, Corralón Atalaya, Reta Bruzzone & Lis, and Barracas Bridge.

Rebate of 15 per cent. for steamers up to 1,000 tons register.				Each shift 16 dols. gold, extra.			
"	10	"	"	from 1,001 to 1,500	"	18	"
"	5	"	"	1,501 to 2,000	"	20	"
No rebate		"	"	2,001 to 2,500	"	22	"
Increase of 5		"	"	2,501 to 3,000	"	24	"
"	10	"	"	3,001 to 3,500	"	26	"
"	15	"	"	3,501 to 4,000	"	28	"

Argentina—Buenos Aires (continued).

For towages during the night an increase of 50 per cent. will be made.

Movements.—All movements effected within a section will be charged according to special tariff, and, when between more sections than one, the charge will be added on to the amount corresponding to the towage between the two points.

In the *La Plata Port*, those steamers which are towed from the Naval Station or Intermediate Channel to the Grand Dock, the difference in towage up to Rio Santiago and from this latter place to the Grand Dock will be added on, or vice versa. Steamers leaving at night in this port will have no extra charge.

Stevedores are always employed for loading and discharging, and are paid according to special arrangement or by contract with owners or agents.

The following is the tariff of a first-class firm :—

DISCHARGING OF STEAMERS.

	Gold under 200.		Gold from 200 to 225.		Gold from 225 to 250.		Gold above 250.	
	0	18 gold	0	16 gold	0	15 gold	0	14 gold
Coal, per ton.	0	02	0	02	0	02	0	02
Use of baskets and shovels for coal	0	17	0	15	0	14	0	13
General cargo, per ton	0	18	0	16	0	15	0	14
Iron, per ton.	0	54	0	52	0	50	0	50
Heavy machinery, 5 to 10 tons.	1	25	1	00	1	00	0	85
" " 10 tons and upwards								

LOADING OF STEAMERS.

	Gold under 200.		Gold from 200 to 225.		Gold from 225 to 250.		Gold above 250.	
	0	16 gold	0	14 gold	0	13 gold	0	12 gold
Wheat, maize, and linseed	0	13	0	12	0	11	0	10
Hay in pressed bales, per 40 cubic feet	0	13	0	12	0	11	0	10
Bran, per ton of 40 cubic feet	0	38	0	35	0	33	0	30
Quebracho	0	16	0	15	0	14	0	13
Wool, per bale	8	25	8	00	7	75	7	50
Salted hides, per 1,000	5	75	5	50	5	25	5	00
Dry hides, per 1,000								

An extra charge is made for work at night, and on Sundays and holidays, unless otherwise agreed by contract. Workmen are paid at the rate of about 4 dols. paper per diem, and foremen at the rate of 8 dols. paper.

DISCHARGING OF SAILING VESSELS.

	Paper. Dols. c.
Coal, per ton	0 50
General cargo, per ton weight or measurement	0 45
Salt, per ton	0 50
Rice " "	0 50
Pitch pine, per 1,000 ft.	0 90
Spruce " "	0 50
White pine " "	0 45
Oregon pine " "	0 70

Each member of the crew employed in discharging is paid at the rate of 2 dols. 50 c. paper per diem.

LOADING OF SAILING VESSELS.

	Paper. Dols. c.
Maize, wheat, and linseed, per ton	0 50
Bran, per ton, dead-weight	0 70
Hay, per 40 cubic feet	0 55
Quebracho, supplying all gear	1 20
Tallow, per pipe	0 75
Dry hides, per 1,000	24 00
Bones (half camp, half burnt)	1 60

Argentina—Buenos Aires (continued).

Pro Forma Charges on a steamer, 2,000 tons reg., draught 21 ft. 6 in. Twenty-five days at Buenos Aires :—

	Gold. Dols. c.	Paper. Dols. c.
Stamped paper, entering at Customs (if in ballast, half) .	—	100 00
“ “ clearing at Customs “ “	—	25 00
“ “ for permits to work Sundays, holidays, and at night, discharging, one payment, 25 dols. ; loading, according to requirements, in each case 1 dol. 20 c. (say)	—	30 00
Light dues, per ton register, at 7 c. gold (if in ballast, half) .	140 00	—
Health dues, per ton register, at 1 c. gold (if in ballast, half), if foul bill of health, 3 c. gold	20 00	—
Packet privilege, 200 dols., and stamp 3 dols. .	—	203 00
Bill of health, 5 dols., and stamp, 1 dol. .	—	6 00
Crew list .	—	2 00
Entrance (dock) dues, per ton reg. at 15 c. gold .	300 00	—
Permanency dues, for every 10 tons reg. per day, 5 c. gold, during 25 days .	250 00	—
Wharfage dues, for every 10 tons reg. per day, 15 c. gold, during 25 days .	750 00	—
Port pilotage in and out (shifts extra, each 6 dols.) .	—	55 00
Towage in and out, loaded (say Dock 2), 176 dols. ; less 5 per cent., 8 dols. 80 c. .	167 20	—
	1,627 20	421 00
421 dols. paper at 227 dols. 27 c. .	185 24	
	1,812 44	= £359 12s. 2d.

Pro Forma Charges on a sailing ship, 1,000 tons reg., draught 19 ft. 6 in., fifty days in Buenos Aires :—

	Gold. Dols. c.	Paper. Dols. c.
Stamped paper, entering at Customs (if in ballast, half) .	—	55 00
“ “ clearing at Customs “ “	—	50 00
“ “ for opening register to load . . .	—	50 00
“ “ for closing register when loaded . . .	—	50 00
Light dues, per register ton, at 7 c. gold (if in ballast, half).	70 00	—
Health “ “ “ 1 c. “ “ “ “	10 00	—
Bill of health, 5 dols., and stamps, 1 dol. . . .	—	6 00
Crew list .	—	2 00
Entrance (dock) dues, per register ton, at 15 c. gold .	150 00	—
*Permanency dues, per every 10 register tons, at 5 c. gold per day .	250 00	—
*Wharfage dues, per every 10 register tons, at 10 c. gold per day .	500 00	—
Port pilotage in and out (shifts extra, each 6 dols.) .	—	50 00
Towage in and out, loaded, say between Sections 7 to 9 in the Riachuela, 288 dols. (shifts extra, each 35 dols.) .	—	323 00
	980 00	586 00
586 dols. paper at 227 dols. 27 c. . . .	257 84	
	1,237 84	= £245 12s. 0d.

* Usually for charterers' account.

CARMEN DE PATAGONES AND VIEDMA.

These two townships stand opposite one another on the N. and S. banks of the Rio Negro, about 20 miles from its mouth, which is in lat. 41°0' S., long. 62°50' W.

Population.—The combined townships, 3,000.

Accommodation.—Vessels drawing 12 ft. can cross the bar at the entrance to the river in very fine weather, but it is not safe for vessels above that draught. In the middle of the river, inside, there is a depth

Argentina—Carmen de Patagones and Viedma (*continued*).

of 30 ft. abreast the pilot-house. Once inside, vessels lie in perfect safety. There is a jetty with 13 ft. of water at Carmen de Patagones, mostly for the use of coasting steamers.

All supplies are imported from Buenos Aires. Climate healthy.

Pilotage.—There is a pilot station at the mouth of the river, and a charge of 2 dols. per foot draught is made.

Provisions:—Fresh meat and provisions can always be obtained. Beef, 1½d. per lb.; mutton, 1d. per lb.; vegetables and fruits cheap and abundant in the season.

Pro Forma Charges on a foreign vessel of 174 tons reg., ballast in, and cargo of hides, skins, horns, wool, tallow, etc., out, drawing 11 ft. :—

	Gold dols.
Entering at Customs	15
Clearing " (including bill of health)	15
Manifest "	15
	45 = £8 18s. 6d.

CONCEPCION DEL URUGUAY.

Concepcion del Uruguay, in lat. 32°25' S., long. 58°13' W., is situated on the right bank of the River Uruguay, in the province of Entre Rios.

Accommodation.—The port consists of two parts, outer and inner. Steamers drawing 19 ft. can enter the inner port, and those drawing 20 to 22 ft. the outer.

Cargo is loaded by shoots from railway trucks which run on to the pier, but ocean-going vessels drawing more than 11 ft. lie off at a distance of 600 yards from the shore, and loading and discharging is done by lighter. There is 20 to 21 ft. of water at the end of the mole.

With two shoots a steamer can load 500 tons of cereals per day, and unload about 250 tons per day.

Port Charges.—Wharfage Dues:—In the outer port 2 c. paper per reg. ton per day, for Argentine vessels, and 2 c. gold, per reg. ton per day for foreign vessels. **Anchorage Dues:**—1 c. to 2 c. per reg. ton.

Towage:—From the main stream of the Uruguay to the inner port, or vice versa :—

Vessels up to 30 tons register	5 pesos currency.
Vessels from 31 to 60 tons reg.	10 " "
" 61 " 100 "	15 " "
" 101 " 200 "	20 " "
" 201 " 400 "	30 " "
" 401 " 700 "	40 " "
" 701 " 1,000 "	50 " "
" of more than 1,000 tons reg.	60 " "

These rates include lying alongside the wharves or casting off from the wharves, as the case may be, if these operations are carried out without interruption. The lying alongside or casting off, if carried out separately, are subject to a fee of 25 pesos currency. **Stevedore:**—Cereal steamers, from 30 c. to 45 c. paper per ton; sailing ships, from 50 to 55 c. paper per ton. Steamers loading charcoal, firewood, timber, etc., do their own stevedoring.

Argentina.

GUALEGUAYCHÚ.

Gualeguaychú, in lat. $33^{\circ}5'$ S., long. $58^{\circ}30'$ W., is on the river of the same name, about 20 miles from Fray Bentos.

Accommodation.—The River Gualeguaychú, until it reaches the canal of the Uruguay River, has only a depth of 8 ft., and the traffic from the port to the canal opposite Fray Bentos is effected by means of cargo lighters, towed by small tug steamers.

Railway connection with the interior of the province of Entre Rios.

Port Charges.—Towage:—From Gualeguaychú to the canal (Liebig's works), or vice versa, 1 dol. 50 c. gold per ton (1,000 kilos.) of cargo, say 5 fr. Sometimes only 4 fr. per ton is charged. **Stowage:**—1,000 salt horse hides, 4 dols.; 1,000 cow hides, 8 dols.; 1,000 dry cow hides, 10 dols.; bones, 1 dol. per ton; 113 bales hair (pressed), 7 dols.

LAGUNA DE LOS PADRES.

Laguna de Los Padres (or Mar del Plata) is in lat. $37^{\circ}58'$ S., long. $7^{\circ}25'$ W.

Exports.—Wool, hides, and bones.

Accommodation.—This place is an open roadstead near Cape Corrientes. The anchorage is good, but somewhat exposed to winds from the N.E. Vessels with good ground tackle can load in comparative safety near a wooden jetty.

Vessels must clear at Buenos Aires.

Railway communication with Buenos Aires.

LA PLATA.

La Plata is in lat. $35^{\circ}0'$ S., long. $57^{\circ}55'$ W.

Population.—80,000.

Accommodation.—Vessels drawing up to 22 ft. rarely suffer any detention in entering or leaving the port of La Plata, and some of the large mail steamers frequently leave drawing as much as 24 ft. Dredging has commenced, to increase the draught to 28 ft. Vessels entering La Plata moor alongside the wharves or quays in the Grand Dock Ensenada, which is entered from the river by a canal $4\frac{1}{2}$ miles long, available for vessels drawing 5 ft. Grand Dock Ensenada has a water area of 60 acres, and a length of 1,066 ft. quayside; the depth at the entrance at ordinary springs is 30 ft. at high water, and 23 at low. At the quayside the depth is 2 ft. less than at the entrance. There are thirty-two hydraulic cranes to lift $1\frac{1}{2}$ tons each, and three steam cranes for discharging coal at the rate of 200 tons a day each. The coal cranes belong to the Coaling Co. There are warehouses with a capacity of 500,000 tons, and every facility for discharging and loading vessels. The railway runs along the wharves, and alongside the vessels.

Time Signals.—Chronometers can be checked. A red ball is hoisted on a mast on the engine house at the south end of the Grand Central Dock at 0 h. 4 m. 15 s., and dropped at 0 h. 8 m. 15 s. local mean time, equal to 4 h. 0 m. 0 s. Greenwich mean time.

Port Charges.—Entrance Dues:—15 c. gold per reg. ton. The port of La Plata has been incorporated with that of Buenos Aires, and vessels are now admitted free at La Plata, if they have entered at Buenos Aires,

Argentina—La Plata (continued).

and paid entrance dues there. Steamers proceeding to an up-river port, and from thence to La Plata pay 2 c. gold on their reg. tonnage for port entry dues. **Health and Light Dues** :—8 c. per reg. ton ; if in ballast, half. **Wharfage Dues** :—10 c. per 10 tons per day.

Steamers entering La Plata port for supplies of coal only, will only have to pay the port dues upon the quantity of coal they may receive, instead of upon their full reg. tonnage. Steamers are not allowed to coal or perform cargo operations outside the port of La Plata.

Pro Forma Charges on a steamer of 2,000 reg. tons, drawing 22 ft., with a cargo of coal, 10 days in La Plata :—

	Gold. Dols. c.	Paper. Dols. c.
Entrance (dock) dues, per reg. ton at 15 c. gold	300 00	—
Permanency dues, 5 c. per 10 tons per day, 10 days	100 00	—
Wharfage dues, 10 c. per 10 tons per day, 10 days	200 00	—
Light and health dues, 8 c. per ton (in ballast, half)	160 00	—
Packet privilege, stamps and petition for same	—	220 00
Stamps to manifest, entering at Customs	—	100 00
Additional sheets, working on Sundays and nights, stores lists, sundry petitions, etc. (say)	—	25 00
Bill of health, 5 dols. ; crew list, 2 dols.	—	7 00
Garbage dues (say)	4 00	—
Port pilotage, in and out, and boat attendance	28 00	2 00
Custom House fees and gratuities to guards, etc. (say)	—	20 00
Towage, in and out (say)	130 00	—
Agency fees, inwards, £10 10s.	52 92	—
Clearing and dispatching in ballast	10 08	—
*Use of shore cranes, 5 c. per ton, say 4,500 tons	225 00	—
	1,210 00	374 00
Conversion of 374 dols. paper at 227·27 per cent.	164 56	
	1,374 56	£272 14s. 7d.

* Not compulsory.

Pro Forma Charges on a sailing ship of 1,000 reg. tons, drawing 19 ft. 6 in., fifty days in La Plata :—

	Gold. Dols. c.	Paper. Dols. c.
Stamped papers, entering at Customs (if in ballast, half)	—	50 00
" " additional sheets, store list, sundry gratuities, etc. (say)	—	10 00
Opening and closing register	—	100 00
*Entrance (dock) dues per reg. ton at 15 c. gold	150 00	—
*Permanency dues, 5 c. per 10 tons per day (50 days)	250 00	—
*Wharfage dues, 10 c. per 10 tons per day (50 days)	500 00	—
Health and light dues, 8 c. per ton (if in ballast, half)	80 00	—
Bill of health, 5 dols. ; crew list, 2 dols.	—	7 00
Garbage dues (say)	4 00	—
Port pilotage, in and out, and boat assistance	18 00	2 00
Towage, in and out, loaded (say)	—	300 00
	1,002 00	469 00
Conversion of 469 dols. paper at 227·27 per cent.	206 36	
	1,208 36	£239 15s. 1d.

* Usually for charterers' account.

MAR DEL PLATA.

(See **Laguna de Los Padres**, p. 1193.)

PORT MADRYN.

Port Madryn is situated in lat. 42°40' S., long. 65°0' W., on Nuevo Gulf, and is the port for the Welsh colony of Chubut, in Patagonia.

Argentina—Port Madryn (*continued*).

Population.—About 500.

Imports.—Dry goods, fencing materials, etc.

Exports.—Wool, hides, wheat, and hay.

Accommodation.—The bay is easy of access, being 7 miles road at the entrance, and encompassed by high land. Port Madryn is on the W. side of the bay, 35 miles from the entrance; anchorage is in 10 to 12 fathoms on mud, about a mile from the shore. Rise and fall of tide 16 to 18 ft. Goods are discharged on to the wharf by means of lighters, but a new pier is now under course of construction which, when completed, will allow ocean-going steamers to moor alongside. A railway 12 miles long connects this port with Chubut, on the Chubut River.

Pilotage.—Nil.

Port Charges.—No port charges, as vessels discharge into lighters.

Lighterage:—By the railway, 3 dols. to 4 dols. per ton. **Consular Fees:**—Only levied on vessels under the British flag. **Labour:**—From 3 dols. to 4 dols. 50 c. Argentine paper per 10 hours' work. **Provisions:**—Beef and bread are cheap.

RIO GALLEGOS.

Rio Gallegos is in lat. $51^{\circ}38'$ S., long. $69^{\circ}30'$ W.

Population.—About 500.

Imports.—Provisions, coal, wood, roofing iron, etc.

Exports.—Wool, sheep skins, and tallow.

Accommodation.—This port is situated about 10 miles from the mouth of the river of the same name, the bar of which is impassable except at high tide for vessels over 1,500 tons, and all vessels have to enter with great care. Rise and fall of tide from 40 to 45 ft. At dead low water vessels drawing not more than 25 ft. can swing at the anchorage. At flood tide any vessel can enter.

Clearance Fees:—According to destination. **Consular Fees:**—From 4s. to £1 16s., according to destination.

VIEDMA.

(See **Carmen de Patagones** and **Viedma**, p. 1191.)

THE PARANA RIVER.

The Parana River, which rises in Brazil, acts in its upper course as the boundary between Paraguay and Brazil, and the Argentine provinces of Misiones and Corrientes. It is subject to floods, which render it navigable for vessels drawing up to 14 ft. as far as Corrientes, and to those drawing not more than 8 ft. as far as the Brazilian province of Matto Grosso, some 200 miles from the sea. At ordinary times, however, it may be taken that the head of navigation for ocean-going vessels is the port of Parana, which is situated about 294 nautical miles from the mouth of the river. The ports on the river are:—

Argentina—The Parana River (continued).

	Distance from mouth Nautical miles.
Campana	53
Zarate	60
Baradero	121
San Pedro	129
San Nicolás	163
Villa Constitucion	170
Rosario	202
Puerto Borghi	211
San Lorenzo	218
Diamante	261
Santa Fé (entrance to river)	286
Colastiné	291
Paraná	294

Small steamers sometimes proceed higher up the river to the ports of St. Elena, La Paz, Goya, Empedrado, and Corrientes.

From the order in which the ports are placed in the above table it might reasonably be assumed that the first place for a vessel to arrive at after leaving Buenos Aires on her way up river would be Campana, followed by Zarate and Baradero. Such, however, is not the case; owing to the scarcity of water in the numerous branches of the Parana, the only affluents that can be used is the Guazu, which leads to the main river below the town of San Pedro. Vessels bound for the three ports in the lower reaches of the river must, therefore, turn back, while others proceed up the river to their ports of call. Before reaching Rosario there are two bad passes, the first of Alvear and that known by the name of Paso Paraguay. Should a vessel get aground at either of these places, shipmasters will be well advised at once communicate with Lloyd's Agent (Messrs. Barnet and Co.), Rosario, who will render all possible aid.

It should also be specially noticed that the Chamber of Commerce of Buenos Aires have issued a notice respecting the depth of water at Martin Garcia. This reads as follows:—

“When in a charter-party no specification is made as to the draught at which a steamer is to load above Martin Garcia, it is usual and customary in this market that for ‘bar draught,’ it is understood that the maximum draught which vessels may load above Martin Garcia shall be 17 ft. English from June 1 to September 30, and 18 ft. 6 in. from October 1 to March 31.”

CAMPANA.

Campana, in lat. 34°20' S., long. 58°58' W., is the port of the Buenos Aires and Rosario Railway, and is a place of considerable importance on account of the steamers coming with material and coal for the railway and the different factories situated here.

Imports.—Coal, railway material, etc.

Exports.—Frozen beef and mutton, maize, linseed, etc.

Accommodation.—The railway wharf is 1,980 ft. long, with a depth of water from 15 to 19 ft. The River Plate Fresh Meat Co. has a wharf 560 ft. long, with a depth alongside of 12 to 25 ft., which can accommodate two steamers. Each of the other factories have small wharves for steamers to come alongside for the discharge of coal or petroleum. There are several steam cranes to lift from 1 to 5 tons.

In addition to the permanent railway shops, there are the River Plate Fresh Meat Co.'s factory, two paper factories, and an oil refinery;

Argentina—Campana (*continued*).

Pilotage.—From Buenos Aires roads to Campana is from 60 dols. to 80 dols. gold, or more according to tonnage, and 10 dols. gold for every movement in the port.

Port Charges.—**Anchorage** :—1 c. gold per ton. **Sanitary and Light Dues** :—8 c. gold per ton.

ZARATE.

Zarate, in lat. $34^{\circ}15'$ S., long. $59^{\circ}10'$ W., is 60 nautical miles from Buenos Aires.

Population.—12,000.

Imports.—Coal, wood pulp, and machinery.

Export.—Frozen and chilled meat.

Accommodation.—There are several factories here. Vessels can load alongside the various moles to a depth of 18 ft. The bars between Zarate and Buenos Aires have from 15 to 25 ft. of water, according to the state of the river.

Pilotage.—Rates according to fixed tariff.

Port Charges.—**Wharfage** :—Town wharf, 20 c. per 10 tons.

Coat Hire :—15 to 20 dols., according to services rendered. **Light Dues** :—see Argentina. **Labour** :—4 dols. per day of 8 hours; overtime, double.

Brokerage :—About 50 dols. gold for clearing steamer with full cargo inwards. **Anchorage Dues** :—1 c. per ton (payable at first port of call on the Parana River). Mooring, 10 dols. gold for each movement of a steamer of 1,000 tons.

BARADERO.

Baradero, in lat. $33^{\circ}58'$ S., long. $59^{\circ}35'$ W., is situated upon a branch of the Parana River, called the Rio Baradero, about 100 miles distant from Buenos Aires, and about 90 miles from Martin Garcia.

Population.—About 8,000.

Exports.—Maize, linseed, hides, wool, etc.

Accommodation.—Vessels anchor in 8 fathoms of water, but beside the river the depth varies from 14 to 18 ft. Ocean-going vessels load at a place called Boca de Abajo, 22 miles below Baradero, their cargoes being brought down from Baradero in lighters. Provisions can also be obtained in the same way.

Port Charges.—**Custom House Stamped Paper** for ships under 500 tons reg., entering with cargo, about 30 dols. paper; loading outwards, about 85 dols. paper. For vessels over 500 tons reg., 5 dols. additional for entrance with cargo, and 15 dols. additional for clearance outwards, added. **Light Dues** :—7 c. paper per reg. ton, paid at the first port of entry to the River Plate. **Health Visit** :—2 c. paper per reg. ton, paid at the first port of entry to the River Plate. **Brokerage** :—Sailing ships, 10 to 30 dols. (gold), and 5 per cent. on chartering. Steamers with packet privileges (costing 600 dols. paper for three years), pay double stamps and dues at their first port of entry to the Plate, and about 5 dols. paper at each port they touch afterwards. **Provisions** :—Beef, about 6 c. gold per lb.; sheep, weighing 20 kilos., from 2 to 3 dols. gold each.

Argentina.**SAN PEDRO.**

San Pedro is 96 miles above Martin Garcia.

Accommodation.—Ocean-going vessels anchor out in the River Parana, where there is deep water, and loading and discharging is done by lighters. There is an inner port formed by a backwater, and when the river is high, steam lighters drawing 14 ft. can enter and load from the shoots of which there are six, opposite the various warehouses. Lighters can load about 100 to 150 tons daily from one shoot, and coal can be discharged at the rate of 50 tons per day. Ballast (sand) is discharged into lighters and landed on an island, close to which vessels anchor, at a cost of 3 dols. paper per ton. The charge for loading ballast is 5 dols. paper per ton.

SAN NICOLÁS.

San Nicolás, in lat. 33°30' S., 60°12' W., is on the right bank of the river, about 130 miles above Martin Garcia.

Population.—About 20,000.

Imports.—Railway material, coal, etc.

Exports.—Grain, wool, hides, and sheepskins.

Accommodation.—There is always more water in this port than on the bar at Martin Garcia, and vessels, when the river is normal, can load to a depth of 20 ft. Discharging is carried out by means of electric crane on the newly constructed wharf belonging to the Sociedad Anonima Puerto San Nicolás, where steamers berth. Loading is carried out by shoots from the shore, at the rate of 400 to 500 tons daily, per steamer.

Pilotage.—Steamers are obliged to employ harbour pilots; the charge being 20 dols. gold, in and out. River pilots are provided by the Sociedad Practicas de Rios; charges according to tariff.

Port Charges.—**Entrance Dues**:—10 c. gold per reg. ton. **Wharfage**:—At the wharf, 7½ c. gold per 10 reg. tons; wharfage at Carranca, 6½ c. gold per 10 reg. tons. **Winch Dues**:—35 c. gold per metric ton. Ballast if of stone or clean sand, can be profitably disposed of; for loading, it can be obtained at about 1 dol. paper per ton. For the use of the mooring buoy a charge of 20 dols. paper is made.

VILLA CONSTITUCION.

Villa Constitucion, in lat. 33°18' S., long. 60°20' W., is 35 miles below Rosario, on the river Parana.

Imports.—Coal and railway material.

Exports.—Wheat, maize, and linseed.

Accommodation.—Large ocean-going vessels can always load here up to 18 ft. draught or more. There are several wharves, and a railway mole with facilities for discharging. There is also a grain elevator and several large warehouses for the storage of grain. Loading is rapidly done by means of shoots from the river bank.

Pilotage.—Port pilot's charge is 20 dols. paper.

Argentina.

ROSARIO DE SANTA FÉ.

Rosario de Santa Fé, in lat. $33^{\circ}5'$ S., long. $60^{\circ}40'$ W., is situated about 300 kilometres by water from Buenos Aires, on the right bank of the River Parana. It is the second town of importance in the Argentine Republic.

Population.—About 156,000.

Imports.—Provisions, wines and spirits, spun and woven goods, chemical products, etc., oils, lumber, general hardware, iron, rolling-stock, agricultural implements, glass and crockery wares, paints and varnishes, etc.

Exports.—Agricultural products and live stock, maize, wheat, linseed, etc.

Accommodation.—This port is admirably situated for loading vessels owing to the natural high cliff, the grain being loaded in bags by means of shutes run into the steamers' holds, besides which the port boasts of numerous private electric elevators for loading grain in bulk, as also a large electric elevator belonging to the Port Company with deposit, with storage capacity of 30,000 cubic metres. Coal and other material is discharged at the different railway and private wharves. The banks in the river have been dredged, the passes are well buoyed, and have a depth with a low river of 21 ft. at lowest water. Two dredges are constantly employed in the port. The Government wharf has 15 to 25 ft. alongside. There are fifteen cranes, including one 10-ton and six electric $1\frac{1}{2}$ -ton. The Central Argentine Railway Company's wharf is 1,766 ft. long; depth, 17 to 20 ft. at low river and 30 ft. at high. It is equipped with six $3\frac{1}{2}$ -ton steam cranes and two 10-ton travelling cranes, together with sheers to lift 30 tons.

Cordoba and Rosario Railway Co.'s Wharves.—There are two wharves with a depth alongside of 20 ft. They are provided with one 5-ton and one 7-ton steam crane for discharging kerosene.

General merchandise, etc., is handled at the National Port Company's moles, discharge being done by steam winches and electric cranes. The Port Company has direct control of all wharves in the area of the port, steamers making use of same being subject to the various tariffs for permanence, wharf dues, etc., same having been approved of by the National Government.

Steamers after passing Martin Garcia have nearly always sufficient water to reach the port of Rosario.

Steamers entering for the purpose of coaling only anchor in the roads at a distance of some two miles from the port, the operation being effected by means of lighters. There are no port charges connected with same.

The following railway lines converge at Rosario: The Central Argentine Railway, Cordoba and Rosario, Provincial de Santa Fé, Cia General de Ferrocarriles de la Provincia de Buenos Aires, and the Ferro Carril Rosario a Puerto Belgrano. The Port Company were in November, 1908, authorized by a Government decree to extend the railway tracks and to carry out various alterations of roads and other harbour extensions.

Port Regulations.—No vessel must enter or leave the port without hoisting her national flag. Vessels subject to the sanitary visit, and coming from the south, should wait for the said visit below the work-

Argentina—Rosario de Santa Fé (*continued*).

shops; vessels coming from the north should wait in the channel in front of the coastguard station.

Captains of vessels calling at the port for the first time receive from the Port Company a copy of the port regulations, and must sign a document agreeing to all rules therein contained, as will also the consignees and all other persons who require to effect operations in the port. When vessels which have already been provided with a copy of the regulations enter the port, a second copy will not be furnished, but captains must sign each time an agreement similar to that signed on the first visit. Until the acceptance or agreement has been signed the vessel concerned will not be allowed to remain in the port, nor can any work be done by her or by her consignees.

The entry at Customs must be made within forty-eight hours after arrival. Any cargo discharged which does not appear on the manifest and which cannot be satisfactorily accounted for is confiscated. A fine can also be imposed. If a less quantity of cargo than appears on the manifest is landed a fine of 20 dols. gold is imposed for each package short.

Pilotage.—Vessels of more than 500 tons reg. must have a pilot on board when navigating in or out of the port. When in need of a pilot vessels hoist the letter P of the international code of signals on the foremast and keep the flag flying until the pilot is on board.

RIVER PILOTAGE FROM BUENOS AIRES TO ROSARIO.

Up to 1,500 tons reg.	50 dols. gold	} For steamers and sailing vessels towed.
" 2,000 "	60 " "	
" 3,000 "	70 " "	
Over 3,000 "	80 " "	

Sailing vessels not towed pay 60 per cent. more than the tariff.

PORT PILOTAGE.**Steamers.**

Up to 1,000 tons reg.	6 dols. gold per shift.
" 1,500 "	7 " " "
" 2,000 "	8 " " "
" 2,500 "	9 " " "
" 3,000 "	10 " " "
Over 3,000 "	12 " " "

Entering or leaving port, 6 dols. gold.

Sailing Vessels.

Up to 500 tons. reg.,	6 dols. gold per shift.
" 800 "	9 " " "
Over 800 "	12 " " "

Port Charges.—Entrance Dues :—15 c. gold per ton reg. **Pro**
manence Dues :—5 c. gold per 10 tons reg. or fraction thereof. **Wh**
Dues :—10 c. gold per 10 tons reg. or fraction thereof. **Custom Ho**
Stamps :—Stamp manifest entry for steamers, 110 dols. paper. For sail
vessels under 500 tons, 92 dols. paper; over 500 tons reg., 110 dols. pap
Packet Privileges and Tonnage Certificate :—207 dols. 50 c. pap
Light and Health Dues :—Steamers with cargo, 7 c. gold per reg. to
sailing vessels with cargo, 1 c. gold per reg. ton. Steamers and sail
vessels in ballast pay half the above rates. **Consul's Fees** (paper)
British, 42 dols.; Portuguese, 12 dols. 50 c.; Spanish, 19 dols. 15
Uruguayan, 11 dols. 80 c.; American, 11 dols. 80 c.

Pro Forma Charges on a steamer of 4,731 tons reg., arriv
in ballast from a foreign port, and dispatched loaded after a stay of
days at Rosario :—

Argentina—Rosario de Santa Fé (*continued*).

	Paper Dols. c.	Gold Dols. c.
River pilotage	—	125 00
Port pilotage (two shifts)	—	36 00
Entry port dues	—	709 65
Light dues	—	165 59
Health dues	—	23 65
Wharf dues, 10 days	—	474 00
Permanence dues, 10 days	—	237 00
Packet privileges and stamp	207 50	—
Stamp manifest entry	57 50	—
Consul's fee (British)	42 00	—
Signal station	4 00	—
Boat hire	20 00	—
Customs dispatcher	—	15 00
Postages, petties, etc.	30 00	—

361 00 + 1,785 89 = £385 18s. 9d.

PUERTO BORGHI, OR PUERTO CANALETAS.

Puerto Borghi is a loading place above Rosario.

Accommodation.—The high banks of the river enable vessels to load from shoots, of which there are four (one fixed and three movable) for loading grain, and three for loading quebracho. This wood is sent down in large quantities from the Chaco. Vessels can load to a draught of at least 18 ft., and at the wharves there is a depth of 22 ft. to 24 ft. of water. The port pilot of San Lorenzo takes charge of vessels here. There are two warehouses, one of which belongs to a French Railway Company. Ballast can be discharged at a cost of from 1 dol. to 2 dols. paper per ton.

SAN LORENZO AND PUERTO SAN MARTIN.

San Lorenzo is in lat. 32°40' S., long. 60°40' W.

Export.—Grain.

Accommodation.—Loading is done here by means of shoots from the high banks of the river. There is deep water at all the principal moles. Large elevators have been erected on the "Drysdale" mole, and three steamers can easily load simultaneously. From 130 to 200 tons of grain can be loaded per hour. Good work can be done at night time, as the port is illuminated with electric light.

Vessels can enter here, but must clear at Rosario.

Pilotage.—Port pilotage is compulsory, and a charge per reg. ton is made for each shift. Vessels of 1,000 tons, 6 dols. gold; 1,500 tons, 7 dols. gold; 2,000 tons, 8 dols. gold; 2,500 tons, 9 dols. gold; 3,000 tons, 10 dols. gold; over 3,000 tons, 12 dols. gold.

PUERTO GOMEZ.

Puerto Gomez is another place for shipping grain, situated 25 to 30 miles from San Lorenzo, but is of little importance.

DIAMANTE.

Diamante is in lat. 32°8' S., long. 60°35' W.

Export.—Grain.

Accommodation.—Ocean-going vessels of heavy draught can

Argentina—Diamante (*continued*).

enter this port and load alongside the mole from shoots leading from the grain warehouses, at the rate of about 400 tons daily. Discharge is slower.

There is no need for the services of a port pilot.

There are no port charges.

SANTA FÉ.

Santa Fé is in lat. $31^{\circ}35'$ S., long. $60^{\circ}40'$ W.

Accommodation.—It is not possible for ocean-going vessels to come here, and owing to the scarcity of water, and the many abrupt turnings in the river Santa Fé, leading to the town, vessels loading cargo from this port generally lie out in the Parana. Port works are at present in progress, two large docks are being made, and a channel has been cut to the main river. The port works will probably be completed by about the end of 1909, and vessels will then be able to load down to 20 ft. when the river is at its lowest, and there will be every facility for the quick handling of cargoes.

COLASTINÉ.

Colastiné is in lat. $31^{\circ}37'$ S., long. $60^{\circ}30'$ W.

Exports.—Grain and quebracho wood.

Accommodation.—Vessels are moored alongside a mole where there is 22 to 23 ft. of water affording excellent discharging and loading facilities under normal circumstances, but when the river is in full flood the mole is submerged, and at such times vessels lie out in the river, where the anchorage is good, and load and discharge by means of lighters.

Grain can be loaded at the rate of 700 to 800 tons daily per vessel, and quebracho wood is also loaded in large quantities, and can be put on board at the rate of about 250 to 300 tons daily. There are no cranes. Coal and general cargo can be discharged at the rate of about 200 tons daily.

Pilotage.—Port pilotage is compulsory. 10 dols. gold each movement.

Port Charges.—**Light and Health Dues** :—Same as Buenos Aires.
Stevedoring :—Grain, 16 c. gold per ton ; quebracho, 60 c. gold. per ton.

**CURTIEMBRE, HERNANDARIAS, AND
PUERTO URQUIZA.**

Curtiembre, Hernandarias, and Puerto Urquiza are three small places situated on the Parana, above Colastiné, where vessels very occasionally load parcels of grain.

PARANA.

Parana, in lat. $31^{\circ}45'$ S., long. $60^{\circ}30'$ W., is situated on the left bank of the River Parana, about 150 miles above Rosario.

Population.—About 27,000.

Imports.—Coal, agricultural machinery, manufactured goods, iron, lumber, etc.

Exports.—Wheat, linseed, maize, flour, wool, hides, bones, br. bone dust, etc.

Accommodation.—Before reaching this place there is a bar

Argentina—Parana (continued).

cross, upon which during low water there is only 13 to 14 ft. of water, but as a rule the depth varies between 17 and 23 ft. The port (which is known as the Bajada Grande) is 5 miles from the port of Colastiné, and about $3\frac{1}{2}$ miles from the town of Parana, with which it is connected by the Entre Rios Railway. The river is very variable, but vessels drawing up to 17 ft. can usually reach Bajada Grande all the year round, and frequently from December to May up to 20 ft. draught. Anchorage in 7 to 8 fathoms. A good wharf, with accommodation for four ocean steamers, has been constructed by the Railway Company. There are steam cranes and all necessaries for loading and unloading steamers. Rails run alongside the vessels. Slight repairs can be carried out.

Pilotage.—20 dols. gold, in and out.

Port Charges.—**Shipbroker** :—Entrance and clearance, 20 dols. gold. **Mole Dues** :—15 c. gold the first 100 tons, and $7\frac{1}{2}$ c. the remainder. **Stevedore** :—Loading, cereals, $26\frac{1}{2}$ c. gold per ton; discharging, general merchandise, 44 c. gold per ton.

SANTA ELENA.

Santa Elena, in lat. $30^{\circ}20'$ S., long. $59^{\circ}32'$ W., is situated 80 miles above Colastiné.

Imports.—Coal, salt, iron, etc.

Exports.—Meat extract, hides, bones, etc.

Accommodation.—This port is only very occasionally visited by ocean-going vessels, and owes its commercial existence almost exclusively to Kemmerich's extract of meat factory. From December till May there is from 17 to 20 ft. of water alongside the moles, where the produce of the factory is loaded. Loading and discharging can be done at the rate of 400 tons per day.

The expenses of a vessel of 500 tons averages from 80 to 100 dols. paper. **Ballast** :—Sand, for stiffening, can be obtained at 1 dol. paper per ton f.o.b.

LA PAZ.

La Paz, in lat. $30^{\circ}45'$ S., long. $59^{\circ}38'$ W., is situated 100 miles above Parana.

Accommodation.—This port is suitable for vessels of about 250 tons, drawing 12 to 13 ft. Vessels seldom charter for this port.

GOYA

Goya, in lat. $29^{\circ}20'$ S., long. $59^{\circ}20'$ W., is about 220 miles above Rosario. No vessel should charter for this port, the depths of the river varying greatly.

EMPEDRADO.

Empedrado, in lat. $28^{\circ}8'$ S., long. $58^{\circ}50'$ W., is in the province of Corrientes, about 50 miles below the town of that name.

Accommodation.—This port can be reached by vessels drawing from 8 to 9 ft. It is the highest point that sea-going sailing vessels proceed to, and tedious detentions have occurred when the river is low. Vessels seldom charter for this port, but those doing so should stipulate towage both up and down.

Argentina.**CORRIENTES.**

Corrientes, in lat. $27^{\circ}35'$ S., long. $58^{\circ}48'$ W., is 140 miles above Goya, and a few leagues south of the confluence of the Paraguay with the Parana.

This port is of no importance, vessels not going farther than Parana or Colastiné, as the depths of the river vary too much.

BRAZIL.

The Republic of the United States of Brazil is made up of twenty-two states, with an area of 3,292,991 square miles, and a population of nearly 20,000,000. The executive authority is the President, the legislative authority being the National Congress, consisting of a Chamber of Deputies and a Senate.

Commerce.—The Customs duties on imports are levied by the Federal Government, and the revenue therefrom remains the property of the Union, but export duties are imposed by the various states, and collected by them without interference on the part of the central authorities. During the year 1908 the value of the imports was £35,491,410, and the exports £44,094,992.

Mercantile Marine.—By a law passed February, 1891, the coasting trade is reserved for Brazilian vessels, which, at the end of 1905, numbered 209 steamers of 93,345 tons, and 340 sailing vessels of 74,475 tons. During 1907, this tonnage was increased with the acquisition of the new Lloyd Brasileiro vessels for the coasting trade, and new foreign services to Buenos Aires and New York.

Currency, Weights and Measures.—The monetary system is the same as in Portugal. The milreis of 1,000 reis is nominally of the value of 2s. 3d., but the exchange fluctuates. During recent years, steady rates have been maintained through Government influences, the average value of the milreis being 1s. 3d. The metrical system of weights and measures is used, but there are certain local qualifications applying to bulk measurements. The more important of these are the following :—

Arroba	A Portuguese measure containing 15 kilos., used for tobacco, and formerly for rubber.
Alquiere	A local measure, from the Portuguese, used for grain and such commodities, equalling 30 kilos. <i>Farinha de Mandioca</i> , one of the principal food imports of Pará, is carried and sold by alquiere.
Frasquiera.	A liquid measure equalling 25 litres or 25 kilos. The local supplies of rum (<i>cachaça</i>) are generally conveyed in frasquieras.
Cofó	A measure equal to 30 kilos., used in the fish trade and generally employed in the conveyance and sale of prawns and shrimps.
Hectolitre	Used in the nut trade. Brazil nuts are calculated by the hectolitre and are exported by this measure.
Lata (a tin)	A tin is used to designate the measure of Copahyba or other oils. It is reckoned at 15 kilos.

Indiarubber, although invoiced by weight in kilos., and so always appearing on official tables of export, is actually made up and shipped in wooden cases, each case containing a quantity dependent in weight on the quality of its contents.

Pará rubber is exported in cases of the following weights :—

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	Weight of Case for Shipment. Kilos.
Islands—	
Fine and extra fine	170
Coarse	300
Cametá	300
Tocantins, Caucho ball	330
Up-river—	
Fine and extra fine	} 160 to 170*
Coarse	
Caucho ball	
Caucho slab	

* Optional.

Caucho slab is sometimes shipped in bulk in the slabs of raw rubber, just as it is prepared in the forest from the trees.

Internal Communications.—The country is fairly well equipped with railways, the following table showing the position as existing on January 1, 1908 :—

	Open to Traffic.	Building.	Surveys Approved.	Total.
	Metres.	Metres.	Metres.	Metres.
Belonging to the Union—				
Administered by the Union	2,906,547	694,087	996,148	4,596,782
Leased	5,024,476	460,269	511,960	5,996,705
Concessions granted by the Union—				
With guarantee of interest	1,746,629	1,355,967	1,069,558	4,172,154
Without " "	1,755,348	—	1,268,379	3,023,379
Lines belonging to the States	6,172,217	801,712	2,833,964	9,808,241
Total	17,605,217	3,312,035	6,680,009	27,597,261

The Republic also possesses three navigable waterways in the Rivers Amazon, Paraguay, and San Francisco. The most important of these, the Amazon (often referred to by South American writers as the Mediterranean of South America), affords a greater extent of inland navigation than any other river in the world. The main stream between Pará and Iquitos provides about 2,200 miles of continuous navigation extending over by far the greater portion of South America at its widest part, and to within a comparatively short distance of the Cordillera of the Andes. Belém, or, as it is more commonly called, Pará, stands on the right bank of the Tocantins, at a distance of about 65 miles from the Atlantic. This river is in direct communication with the great stream of the Amazon proper, being really its southern mouth, and only divided from the other, and wider, mouth by some islands, the largest of which, Marajó, is about the size of Sicily. The mouth of the River Pará, or lower Tocantins, is the real maritime and commercial entrance of the Amazon, the port of Pará being the exporting centre for the rubber, vanilla, nuts, sarsaparilla, gums, and other products of the Amazonian states. From Pará there is a regular service of river steamers to Mañaos, a distance of 925 miles. The following are the ports of call for these steamers : Breves, Gurupá, Porto de Moz, Prainha, Monte Alegre, Santarém, Alemquer, Obidos, Parintins, Urucurituba, and Itacoatiára, the most important being Santarém and Obidos. At Mañaos, the harbour is in course of construction by the Mañaos Harbour, Ltd., which, when complete, will improve the port considerably, offering greater facilities for the dispatch and loading of steamers. From Mañaos there is a regular service of steamers to Iquitos, the contract

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ports of call on this portion of the river being Manacapurú, Codajás, Coary, Tefé, Caiçara, Tonantins, Sao Pablo d'Oliveira, Tabatinga, Loreto, Sao José de Cochiquinhas, and Pevas. From November until April, when the river is in flood, steamers run direct from Pará to Iquitos.

Iquitos is situated on the right bank of the river, here called the Marañon, where there is a pier constructed in connection with the floating stage for the loading and discharging of steamers, together with some extensive sheds for the storage of merchandise.

The Amazon receives in its journey from its source to the ocean the water from eighteen affluents, of which the most important are the Napo, Putumayo, Japura, and Negro on the left, and the Javari, Purus, Madeira, Tapajos, Xingu, and Tocantins on the right. All these streams are of the first magnitude, the Madeira having a course of 2,000 miles, and the Rio Negro of 1,400 miles. Regular lines of river steamers, owned by the Amazon Steam Navigation Co., Ltd., run on almost all of these tributaries to the great river.

Customs Regulations.—Importation of goods into Brazil and exportation of Brazilian goods can only be effected at authorized ports or places under pain of confiscation and other penalties. Exception is made with reference to calling in distress of weather or other *force majeure*. Customs dues are principally levied by weight, which includes not only the contents of the packages, but also the cases of packing. Weights are divided into "gross," "net," and "real net." "Gross weight" includes the whole package, including the outside casing or wrapping. "Net weight" includes the whole of the contents of the case, i.e., the goods and the packing used inside the case. "Real net weight" is simply the weight of the goods without string, paper, cardboard boxes, etc., and such things as rolling boards, etc., in the case of dry goods. Should the "real net weight" in the consular invoice include any packing, such an error cannot subsequently be altered without liability to a fine, and duties would have to be paid on the "real net weight" as declared in the invoice. Considering the high tariff, and the fact that duties are charged per kilo., packing should be as light as possible.

Shipmasters bound for a Custom House port in Brazil must take with them one manifest, a duplicate being left at the Brazilian Consulate at the port of departure.

When clearing, shipmasters must present documents proving (1) the shipment of the crew, and (2) the measurement of the ship.

Timber and any other articles of Brazilian production employed in the repair and fitting of foreign vessels lying in ports of the Republic are exempt from export duties. The inspectors of the Custom Houses of the ports are charged with the supervision of this privilege. Vessels under the inspection of Customs, both loading and unloading, must keep a blue flag with a large white star in the centre flying, so as to make it known that no unauthorized person can go on board. At night, a special light is to be shown. Masters, officers, or crew, when going ashore, must present themselves at the Custom House, and also when returning on board. No person may leave one vessel to go to others under the Custom House inspection without license from the Head of the Customs. No goods or articles of any kind may be landed or shipped without a written order from the Customs. Captains must inform the first inspector of the Customs within twenty-

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four hours of discharging being completed that the vessel has been discharged of all goods brought, in order that the Customs visit may immediately be paid. Before this visit, a license may be granted to receive some cargo for reasons of safety, subject to security at the option of the authorities. In anchorages for loading and unloading, it is not allowed to keep a fire on board after the retreat tattoo, only lights in closed lanterns being allowed. No vessel may discharge or transfer ballast without a permit from the Customs, and without, in the event of same not being subject to duty, the port captain having indicated where it is to be placed. No merchant vessels, excepting liners, may leave port before sunrise or after sunset. No small vessel or boat may communicate with any vessel making for a harbour of Brazil, or near its coast, rivers, or interior waters, entering or leaving, before the examination on entering or after being cleared for departure. Vessels must proceed direct to the fiscal station for directions where to anchor. Any vessel entering at night must anchor near the fiscal station, and exhibit at night, at a height of 18 ft. or so above deck, a lighted lantern. After the entrance examination, and until completely cleared, no other craft may come alongside vessels subject to Customs, excepting a ship's boat for passengers, or a ship's boat of a man-of-war of the nationality of the vessel, or those with a permit from the fiscal chief. Any captain allowing any other craft alongside, or any person to go on board, will be subject to a penalty of 20,000 to 200,000 reis.

A permit will only be granted to : (1) Purchasers who require to go on board to examine cargo if sufficient samples cannot be brought ashore. (2) Workmen required for work on board, who must be examined on going and returning. (3) Consuls.

When such permits are granted, the Chief of Customs may have the person accompanied if he thinks proper.

Mercantile Procedure.—It is the custom for the expense of landing or shipping a cargo to be paid by the vessel, unless the contrary be stipulated in the bills of lading. The coin in which freight is to be paid for must be expressed in the contracts.

Light Duties.—Payable in gold at the first two Brazilian port of call, either outwards or homewards :—

	Reis.
1 to 200 tons register	40,000
201 „ 400 „	60,000
401 „ 700 „	80,000
Above 700 tons „	100,000

Franquia.—Vessels proceeding to Brazil, and wishing to dispose of their cargoes at different ports, must clear out for any port of Brazil for orders, and the manifest must mention this expressly. They are then entitled to the privilege of franquia, and may land a part of their cargoes at one port, paying duty only on the goods so landed, and proceed with the remainder to other ports ; but if they clear out for one port only, they are compelled to make a complete entry and discharge the whole of the cargo. This rule has been modified, and vessels even in this case may obtain permission to let a cargo proceed, under a bond of responsibility given by the consignee, and to be cancelled only after production of a Customs certificate from port of discharge, that duties have been duly paid.

In proceeding from one Brazilian port to another, it is necessary that a bill of health should be taken from the local authorities of each port.

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and where any part of the cargo is landed, the same must be noted on the original manifest by the Customs officer of the port.

Vessels entitled to Franquia.—Packet-boats and steamers belonging to regular lines are entitled to franquia in all their ports of call or destination.

Vessels loaded with half cargo or ballast, bound for another port, home or foreign, and which enter for some of the following reasons, are considered as entitled to franquia :—

1. To watch the market.
2. To unload part of the cargo destined for that port, or for another, or for storing in bond.
3. To carry out repairs on account of an accident which happened during the voyage, or to avoid loss, or any damage, by reason of *force majeure*.
4. To obtain food and provisions, or to take in fuel.
5. To receive orders.
6. To finish loading.

In the cases referred to in Nos. 1 and 5 of the preceding article, on presentation of the declaration made by the respective captain or master, if the declarations on the manifest and passport do not disagree, the vessel shall be at liberty to remain in the proper anchorage for the space of six working days, and this permission may be extended by the respective inspector or administrator, for a justifiable reason, for eight more working days also, without the vessel being obliged to unload; during this time the cargo shall remain exempt from all dues and taxes whatever, as if they were outside of Brazilian territory. As soon as the appointed time has elapsed, all privileges of franquia will cease, and the vessel will be subject to a fine of 200 reis per ton for every day or night of delay; and, if not entered entirely, and the delay shall exceed eight days, they shall be subject to the same regulations in the respective port as vessels entered in the ordinary way.

Inspectors and administrators may concede franquia for any time that may be necessary for carrying out any of the other acts or operations referred to in the preceding article. Vessels entitled to franquia will be allowed : (1) To unload samples of the cargo, goods, or packages, destined for consumption in the port of entry, or to be bonded, or disposed of, and passenger's luggage. (2) To transfer into another vessel part of the cargo destined for any other port. (3) To deposit or transfer into another vessel part or all the cargo when under repairs or condemned on account of its condition. (4) To finish loading, to take provisions, or fuel.

Goods transferred from one vessel to another are not subject to dues of any nature.

Entrance by franquia shall be permitted : (a) for the discharge of goods intended for bonding and for transfer to other vessels only in the ports where there are bonded stores; (b) for watching the market, or to receive orders in the said ports and in those of the cities of Rio Grande do Norte, Fortaleza, Parahyba, Alagoas, Aracajú, Victoria, Santos, and Santa Catharina.

Manifests.—Any vessel calling at a Brazilian port must have a manifest containing :—

1. Name, class, and tonnage of the vessel and nationality.
2. Name of captain or master.

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3. Port where cargo was loaded, and that of destination and ports of call.

4. Marks and numbers of each package and description if possible.

5. Declaration of quality, quantity, weight or measurement of goods contained in each package as far as possible, and those shipped in bulk.

6. Particulars of the number of packages joined under one cover or lashed together, and quality of goods contained in each of these packages, and quantity, weight, or measure if possible, apart from the further declarations required by 4 and 5.

7. The names of the persons to whom the packages or goods are consigned, or whether to order.

8. Particulars (a) of goods to be bonded or to go in transit with declarations as required by Nos. 4, 5, and 6; (b) of the packages containing inflammable and such-like goods, with particulars as per Nos. 4, 5, and 6.

These declarations must be written in extenso, excepting marks and numbers, and on entire sheets without erasures, numbered and signed by the Consular Agent or person authenticating the manifest. Manifests must be dated and signed by the captain or master of the vessel, or by the agents of liners, and authenticated by the Brazilian Consul or Consular Agent resident in the port of departure, and, in his absence, by the Chief of Customs or local authority; in the latter event the signatures must be certified by the respective Consul at the port of entry should any doubt arise as to the authenticity of same. A vessel having called or taken in or discharged cargo at one or several ports, must have as many manifests as ports at which cargo is received, and as many certificates (made up the same as manifests showing that no cargo is received or discharged, or if discharged the quantity discharged) as there were ports of call. If the ports of call or discharge are Brazilian, the manifests and certificates shall be passed by the Customs or proper fiscal authority. Steamers belonging to regular lines calling at Brazilian ports need not present manifests from the intermediate ports of Lisbon, Madeira, St. Vincent, or other foreign ports, where the steamers make a brief stay and merely take in a few packages and orders; instead of which they must at the first Customs visit present a list of cargo received at each of the said intermediate ports.

BRAZILIAN CONSULATE FEES.

	Reis.	£	s.	d.
Legalization of manifest of cargo of a vessel, calculated on the tonnage according to the laws of the respective countries, up to 500 tons, per ton for the first port	100 = 0	0	1	$\frac{1}{2}$
Ditto for other ports	50 = 0	0	0	$\frac{1}{2}$
For the excess over 500 tons for the first port	10 = 0	0	0	$\frac{1}{2}$
For the excess over 500 tons for other ports	5 = 0	0	0	$\frac{1}{2}$
Visé of each bill of lading of cargo	2,000 = 0	2	6	
Bill of health for each vessel in places where there is no office to grant same, or visé of same	10,000 = 0	12	6	
Legalizing crew list	5,000 = 0	6	3	
Crew list	10,000 = 0	12	6	
Alteration in crew list, per man	1,000 = 0	1	3	
Passports of vessels	20,000 = 1	5	0	
Endorsement of vessels	3,000 = 0	3	9	
Certificate of arrival of vessel in ballast each	12,000 = 0	15	0	
Inventory of ship	24,000 = 1	10	0	
Survey of ship	24,000 = 1	10	0	
Survey of goods on board	24,000 = 1	10	0	
Authorizing a new log, and signing pages, per page	100 = 0	0	1	$\frac{1}{2}$
Alteration from national to foreign flag, including registration and receipt upon deposit of ship's papers, besides excise	30,000 = 1	17	6	

Brazil.**BRAZILIAN CONSULATE FEES (continued).**

	Reis.	£	s.	a.
For the same operation from foreign to national flag, besides excise .	10,000 = 0	12	6	
Alteration from national to foreign flag, including registration and receipt upon deposit of ship's papers, upon yearly chartering price	2 per cent.			
For the same operation from foreign to national flag, upon yearly chartering price	1 per cent.			
Appointment or confirmation of appointment of a captain and his registration	5,000 = 0	6	3	
Charter-party	10,000 = 0	12	6	
Examination of a ship's log	2,000 = 0	2	6	
Public sale of damaged goods or others belonging to the cargo of a vessel, up to 1,000,000 reis	1½ per cent.			
Exceeding the above	1 per cent.			
Management of property forming the cargo and hull of a wrecked ship, upon the value or amount	2½ per cent.			
Power of attorney	10,000 = 0	12	6	
Attestation of signature or legalization of any document not passed in the Consulate	5,000 = 0	6	3	
Certifying per page or part of page	2,000 = 0	2	6	
Certificate or attestation of the Consulate for use in any place.	4,000 = 0	5	0	
Registration of any document in the books of the Consulate, not being the manifest, bill of health, muster roll, and passports, per page or part of page	2,000 = 0	2	6	
Searching in the Consulate's books or papers, besides the fees for certificates, per annum	1,000 = 0	1	3	
If the party indicates the year	500 = 0	0	7½	
Translation of any document, per page or part of page	5,000 = 0	6	3	
Assistance of Consul in matters which require his absence from the Consulate, for each day or each 3 miles distance, in addition to travelling expenses should they arise	10,000 = 0	12	6	
Presence of the Consul at any sale, if required, a commission of	2 per cent.			
Survey of goods on shore	15,000 = 0	18	9	
Appointment of experts each	5,000 = 0	6	3	
Interrogating witnesses. for each	10,000 = 0	12	6	
Protest or declaration	10,000 = 0	12	6	
Life certificate	5,000 = 0	6	3	
Money received or deposited for account of individuals, a commission of	2½ per cent.			
Deed and registration of any agreement up to 5,000,000 reis	1 per cent.			
Exceeding the above	¼ per cent.			
Money paid out for account of individuals	5 per cent.			
Legalization of copy or comparison of translation of any document made otherwise than by the Consulate, for the first page	2,000 = 0	2	6	
For each of the following	1,000 = 0	1	3	
Legalization of invoices.	5,000 = 0	6	3	
Copy of any document written in a foreign language, for the first page	2,000 = 0	2	6	
For each of the following	1,000 = 0	1	3	
Arbitration, value being ascertained :—				
Up to 500,000 reis	2,000 = 0	2	6	
„ 1,000,000 „	4,000 = 0	5	0	
„ 3,000,000 „	8,000 = 0	10	0	
„ 5,000,000 „	12,000 = 0	15	0	
„ 10,000,000 „	20,000 = 1	5	0	
From 10,000,000 upwards, for each 1,000,000 reis	2,000 = 0	2	6	
The value being unascertained or with reference to a matter without value	10,000 = 0	12	6	
Any official document or instrument not mentioned or enumerated in this table, not exceeding 100 words.	5,000 = 0	6	3	
For each additional 100	2,000 = 0	2	6	
Matters of any kind not specified in the tariff.	5,000 = 0	6	3	

Emigration.—There is no emigration (as the word is understood in Europe) from this Republic, and consequently no regulations have been framed dealing with the subject.

Immigration.—The Federal Government, in order to promote the introduction of immigrants who, being agriculturists, and accompanied by their families, desire to settle in the country as owners of the soil, issue free passage passes on selected ships, or refund sums paid for passage to such immigrants arriving at Brazilian ports. The following

Brazil.

are the conditions to which shipowners and shipping companies must conform in order to carry immigrants at the expense of the Government. The transports employed are to be first-class steamships, on which the strictest hygienic rules must be observed and verified at the ports of embarkation and disembarkation. The following are usually included in the contracts, among other conditions : Ships which have twice failed to attain an average speed of ten knots an hour between their ports of departure and Brazil (except in cases of *force majeure*) cannot be employed in the transport of immigrants at the cost of the Government. The verification of the above conditions will be made by reference to the log, and will come within the duties of the agent employed in superintending the embarkation in Europe and the general management of the Immigration Service. The ships must be provided with all the appliances and apparatus necessary to the safety of the vessel and passengers, the number of life-collars not being less than the number of immigrants and other people on board. These also must be placed in their berths. The bedclothes must be in sufficient quantity to allow for changing whenever necessary, in order to maintain cleanliness, and the ship must be provided with appliances for disinfection. The tonnage of ships employed in the transport of immigrants for the Government's account will be determined by the agent in Europe or the General Management of Immigration, the shipping companies or owners not being at liberty to ship a greater number of passengers and immigrants than that which is determined as proportionate to the tonnage. The ships must have arrangements for airing and ventilation in number and capacity proportionate to the number of immigrants or passengers on board and the space occupied by them. The bunks must not be less than 1 metre 80 cm. in length and 0 m. 56 cm. in breadth, nor are more than two tiers of bunks permitted whatever the height of the cabin. The berths must be clearly numbered. They must be so arranged that there is a space of 40 cm., at least, between the floor and the lower bunk, and 70 cm., at least, between the two bunks and between the upper bunk and the cabin ceiling. Each bunk must contain only one person over six years of age or two children between the ages of one and six, and must be provided with a mattress, a pillow, a sheet, and a blanket. There must be two blankets when the bunk is occupied by two children or when the season calls for it. Women must be lodged apart from the men ; though in ships in which the quarters are divided into large cabins containing a restricted number of berths the cabins may be occupied by families.

Every ship transporting more than thirty immigrants must have two infirmaries, one for men and the other for women, situated, appointed, and aired properly, and large enough to receive at least 4 per cent. of the number of immigrants. The ships must be provided with a steam laundry, with which shall be combined appliances for disinfection, for the purpose of washing and disinfecting the clothes of the immigrants during the voyage.

The closets for men and women shall be apart.

There must be on ships transporting immigrants at the Government's expense at least one doctor and one male and one female nurse for each 500 or fraction of 500 immigrants, in order to render them gratuitous medical and surgical aid.

The food must be of good quality, properly preserved, and in quantity sufficient for an average journey increased by a third. The rations shall

Brazil.

be in accordance with a list which the companies or shipowners must submit to the approval of the Government. This list must be posted up in various places where it can be seen, in the compartments occupied by the immigrants. Children weaned and under five years of age shall be allowed a quarter of a ration, those from five to ten years of age half a ration, and all immigrants over ten a full ration. The sick and convalescent shall have a right to special diet, which shall be specified on another approved list.

The drinking water for the provision of the ship must be of unsuspected origin and in quantity sufficient for the number of people on board, to the extent that, after calculating for a long voyage, and the quantity which may be obtained by distillation, the ship shall be able to provide water at the rate of 5 litres for each person per day.

The clauses having reference to the speed of the vessel and the supply of water will only apply to emigrant ships from ports in Brazil or from foreign ports where there are no regulations concerning the transport of emigrants.

Emigrant ships from foreign ports where the transport of emigrants is regulated must conform with the provisions of those regulations, so long as the conditions are not less favourable to the emigrants than those above mentioned.

ANGRA DOS REIS.

Angra dos Reis, in lat. $23^{\circ}0'$ S., long. $44^{\circ}22'$ W., is situated on the north coast of Ilha Grande Bay, about 78 miles S.W. of Rio Janeiro.

Accommodation.—There is 3 to 5 fathoms within $\frac{1}{2}$ a mile of the town. As the navigation is somewhat intricate, it should not be entered without the aid of a pilot. Communication by small steamers with Rio Janeiro. Provisions can be obtained, but there is little or no foreign trade.

ANTONINA.

Antonina, in lat. $25^{\circ}20'$ S., long. $48^{\circ}35'$ W., is about 15 miles above Paranaguá.

Export.—Matte.

Accommodation.—The harbour (natural) is very good and safe; the sea-breeze sets in at about 11 a.m. pretty strong, when the tide runs out strongly. It is best to have a kedge anchor out aft, thus leaving the vessel's head to the strong sea wind. The navigation is very easy, the fairway, where the difficulties are, being marked with buoys—red on port side when entering, white on starboard side; large ships anchor off Itapema Point.

Vessels enter and clear at Paranaguá.

Pilotage.—Not compulsory. From Paranaguá to Antonina, vessels from 100 to 300 tons reg., 15,000 reis.

Port Charges.—**Stevedore** :—Matte, 5,000 reis per 1,000 arrobas (about 7s. per ton). As little knowledge is required for stowing such cargo, many ships dispense with stevedore and stow the cargo themselves. **Discharging Ballast** :—1,000 reis per ton. **Stone Ballast** :—2,000 reis per ton brought alongside. **Provisions** :—Beef, 500 reis per kilo. Vegetables are scarce. Excellent oysters can be obtained. **Water** :—Fresh water can be obtained free of charge.

Port Charges on a vessel of 187 reg. tons amounted to 117,680 reis (£7 7s. 1d.).

Brazil.**ARACAJÚ.**

Aracajú, in lat. $10^{\circ}50'$ S., long. $37^{\circ}5'$ W., is situated at the mouth of the River Cotinguiba.

Population.—About 30,000.

Imports.—Dry goods, hardware, and pottery.

Exports.—Sugar, cotton, cereals, hides, salt, cocoanuts, spirits, tobacco, and coffee.

Accommodation.—There is 15 ft. of water on the bar at high water springs, but no vessel drawing more than 11 ft. should charter for this port, as vessels cannot get under weigh from the anchorage (about $2\frac{1}{2}$ miles off the bar) until the ebb tide begins, and much time is sometimes lost before the bar is reached, so that vessels of this draught are often delayed. A steam-tug can be had. Pilots can be obtained by making the usual signal. Bar from April to September, 10 to 12 ft.; bar from October to March, 12 to 14 ft. Vessels making the port should keep well to the north of the bar, as during the shipping season, from October to April, there is a very strong north-easterly current down the coast. Vessels may close with the land until within soundings of 5 or 6 fathoms, when they will be from 2 to 3 miles distant from the bar, and they should then hoist a signal for a pilot at the fore, and one will proceed on board as soon as the tide turns for the ebb. There is good anchorage to the N. of the bar in 6 to 7 fathoms, hard firm sand, and good holding ground.

Pilotage.—Steamers—2,000 reis per reg. ton, inwards and outwards. Recebedoria, 220 reis per reg. ton; municipal, 10,000 reis per steamer. Sailing Vessels—400 reis per reg. ton inwards, and 400 reis outwards. Recebedoria, 220 reis per reg. ton; municipal, 10,000 reis per vessel. **Towage** :—1,000 reis per reg. ton (will probably be raised to 1,500 reis).

Port Charges.—For **Light Dues** and **Consular Fees**, see **Brazil**. **Stevedore** :—Sugar, 30 reis per bag; cotton, 200 reis per bag; hides, 60 reis each; spirits, etc., 1,500 reis per pipe.

ARACATY.

Aracaty, or Aracati, in lat. $4^{\circ}23'$ S., long. $37^{\circ}44'$ W., is situated on the right bank of the River Jaguarybe, about $8\frac{1}{2}$ miles from its mouth, and is the second commercial city in Brazil.

Population.—12,000.

Exports.—Cotton, dry and salted hides, vegetable wax, and sheepskins.

Accommodation.—There is an average depth of 14 ft. on the bar at high water ordinary springs, and 10 ft. at ordinary neaps. The bar is of shifting sand, and the depth of water depends on the currents and winds. Sometimes there is only 12 ft., and sometimes as much as $14\frac{1}{2}$ ft. at spring tides. Vessels load and discharge by means of lighters. Good anchorage is to be had in the middle of the river, where there is a width of 800 to 1,200 ft. Vessels generally load at Fortinho, 6 miles below Aracaty, where there is a depth of 21 to 22 ft. at high water ordinary springs, and 16 to 18 ft. at low water.

Brazil—Aracaty (*continued*).

Pilotage.—60,000 reis. **Towage** :—There are no regular steam-tugs, but four steamers, which call once during each month, will tow vessels out if required at a charge of 300,000 reis.

Port Charges.—**Custom House**, etc., 80,000 reis. **Bill of Health** :—10,000 reis.

BAHIA.

Bahia, or San Salvador, in lat. 12°50' S., long. 38°30' W., is at the entrance to the Bahia de Todos os Santos.

Population.—265,000.

Imports.—General merchandise, provisions, etc.

Exports.—Sugar, tobacco, coffee, cocoa, cotton, rum, hides, timber, piassava, rice, diamonds, tapioca, etc.

Accommodation.—Vessels anchor first about a mile S.W. of Fort de Mar, where they are visited by the port officials, who seal the hatches and point out a berth. The anchorage in the bay is from 6 to 24 fathoms. Vessels can be hove down and repaired and refitted. There is railway communication with all the commercial centres of Brazil. A new quay wall is being constructed.

Pilotage.—The entrance to the bay is easy, so that the assistance of a pilot is unnecessary. **Towage** :—From roads to discharging grounds, 300 reis per reg. ton, and the same back again. Other towage as per agreement.

Port Charges.—**Light Dues** :—See **Brazil**. **Stevedore** :—Loading, 1,500 to 2,000 reis per ton; discharging coal, 1s. 6d. per ton; other cargo as per agreement. **Labour** :—4,000 reis per day; night, Sunday, or holidays, 10,000 reis. Coal trimming, 8,000 to 12,000 reis per day. **Ballast** :—2,500 reis per ton. **Lighterage** :—Discharging: Steamers with general cargo from Europe, 5,500 reis; from Plate and southern ports, 4,500 reis per ton, into lighters of about 40 to 100 tons d.w.; demurrage, 40,000 reis per diem. Sailing Vessels—Lighters of 100 tons d.w., 100,000 reis; 3 days in lighter allowed. Loading: Steamers—Tobacco, 190 reis per bale of 100 kilos. Coffee, cocoa, wood, tapioca, sugar, etc., 135 reis. Sailing Vessels—Tobacco, 160 reis per bale of 100 kilos. Coffee, cocoa, wood, tapioca, sugar, etc., 100 reis. **Hospital Dues** :—1,920 reis per ton, and 6,000 reis per mast, payable in gold. **Brokerage** :—Entrance and clearance, 50 000 reis each. Legal commission on freight, 5 per cent. in and the same out, but generally charged 2½ per cent. in and 5 per cent. out. Merchants pay the broker 1½ per cent. **Translation of Manifest** :—50,000 reis. **Watchmen** :—In lighters, 4,000 to 6,000 reis per day; 10,000 reis per night. **Passport** :—6,000 reis. **Bill of Health** :—40,000 reis. **Custom House Officers** (inward) :—2,000 reis per lighter, and extra for working at night. **Customs Clerk** :—20,000 reis, both in and out. **Customs Guard** (outwards) :—25,000 reis.

Pro Forma Charges on a vessel of 1,300 tons net reg., with a cargo of coal in :—

	Reis.
Custom House charges and guards, 54,000 reis	647,100
Ship chandler's account	1,135,700
Charge for accepting freight as per bill of lading weight instead of weighing, 2 per cent. on £1,692 12s.	1,065,440
Labour, 2,552 tons at 1s. 6d.	6,024,390
Carried forward	8,872,630

Brazil—Bahia (*continued*).

	Reis.
Brought forward	8,872,630
Telegrams	640,020
Discharging bunker coal	475,000
Postages, petties, etc.	50,000
Agency fee, £10 10s.	330,490

10,368,140 = £648 0s. 2d.
CABADELLO.(See **Parahyba and Cabadello**, p. 1225.)**CAMAMU.**

Camamu is in lat. 13°53' S., long. 39°5' W., and is, after Bahia, the best port on this part of the coast of Brazil.

Exports.—Coffee, spirits, rice, etc.

Accommodation.—The port is spacious, with a depth of from 3 to 9 fathoms, and well sheltered. The town of Camamu stands on the left bank of the Acarahi, about W. by S., 10 miles from Muta Point, at the entrance of the port. Supplies are cheap and plentiful.

CAMETA.

Cameta, in lat. 2°15' S., long. 49°35' W., is situated on the River Tocantins, about 100 miles inland from Pará.

Population.—5,000.

Exports.—Cocoa, tapioca, indiarubber, and Brazil nuts.

Accommodation.—Ships anchor about 1½ cable lengths from the shore, in 8 fathoms of water. The trade is principally effected by river steamers, which run regularly between here and Pará. Ocean steamers do not call. It is unhealthy in December and January, but fairly good at other periods.

CAMOCIM.

Camocim is in lat. 2°55' S., long. 40°50' W.

Population.—20,000.

Imports.—Textiles, silk, wool, linen, wine, kerosene, flour, corn, and ironmongery.

Exports.—Skins, vegetable tallow, cotton, horns, bones, and resin.

Accommodation.—There is a depth on the bar at high water in February of 14½ ft. at ordinary springs, 11½ ft. at ordinary neaps. On account of the bends in the bar channel, it is unsafe for vessels of over 220 ft. length. The depths improve after March. There is good anchorage in the river basin, which is 600 ft. wide and has a low water depth of 14 ft. At the three small wharves there is a depth of from 7½ to 12 ft. at low water. There are three light buoys with white, red, and green lights, and a beacon in front of the bar. Railway connection with Sobral.

Pilotage.—Vessels drawing 2·10 metres (6 ft. 10 in.) up to 2·40 metres (7 ft. 10 in.) per 100 tons measurement, 16,000 reis; from 100 tons up to 1,000 tons, 40 reis per ton; and 2,000 reis for every 30 centimetres (1 ft.) draught over 2·40 metres (7 ft. 10 in.). From 1,000 tons upwards, 30 reis per ton. In addition to the above 1·500 reis is also payable on every 500,000 reis or fraction thereof of the freight.

Brazil—Camocim (*continued*).

Port Charges.—Entrance and Clearance Fees :—12,900 reis. **Bill of Health :—**20,300 reis. **Boat Hire :—**3,000 reis. **Ballast :—**2,000 reis per ton. **Labour :—**2,000 reis per day on shore; stowing cargo, 4,000 reis; double rates are charged for night work. **Gratuities to Guards :—**10,000 reis holidays; 20,000 reis at night time.

CARAVELLAS.

Caravellas is in lat. 17°50' S., long. 39°23' W.

Population.—About 3,500.

Import.—Cloth.

Exports.—Whale oil, coffee and cocoanuts.

Accommodation.—The river Caravellas admits vessels of 14 ft. draught at almost any high tide. Inside the bar there is a fine harbour, about $\frac{1}{2}$ a mile wide and 6 miles long, with 16 ft. water. The town is 4 miles from the entrance.

Small vessels are built here.

Pilotage.—Compulsory. 50,000 reis per vessel.

Port Charges.—Mooring :—20,000 reis per vessel. **Labour :—**4,000 reis per day.

CEÁRA.

Ceára, or Fortaleza, in lat. 3°55' S., long. 38°30' W., is about 5 miles S.W. of Point Mucuripe.

Population.—35,000.

Imports.—Iron and steel work, machinery, wine, general merchandise, etc.

Exports.—Cotton, hides and skins, rubber, sugar, etc.

Accommodation.—The harbour is formed by a reef of rocks running parallel with the beach, and about 400 yards distant. From half flood to half ebb this reef is covered, and with the wind from the N.E. the sea runs over it, causing a high surf on the beach, when the inner harbour is unsafe for vessels of over 14 ft. draught. Sailing vessels should stand close in to Mucuripe, and if a pilot does not come off at once, anchor in 5 or 6 fathoms; many vessels have been swept to leeward by the current, having made too long tacks off the port. The heaviest sea rolls in during the months of February and March. There is now an iron pier on which passengers can land, and cargo can be discharged at any tide. On this pier there are two steam cranes for lifting the cargo out of the lighters. Small steamers drawing up to 16 ft., and sailing vessels of 15 ft., can come inside the reef, but vessels of deeper draught must anchor in the outer roads about $\frac{3}{4}$ of a mile from the shore. To come to an anchorage in the outer roads in about 5 to 6 fathoms, keep the two square towers of the cathedral in a line until Mucuripe lighthouse bears E.S.E. There is good anchorage for deep vessels to discharge at with Mucuripe lighthouse bearing E. $\frac{3}{4}$ S., and the cathedral towers nearly in a line bearing S.W. by S. $\frac{1}{2}$ S. magnetic, in $4\frac{1}{4}$ fathoms, but strangers to take up anchorage anywhere inside the outer roads should have a pilot on board.

The breakwater is now buried up in sand on the sea side, but during D.C.

Since the harbour works were started here (they are now abandoned) the inner harbour has filled up ; the depth of water is less than it was, and the port is also now very narrow, not having room for more than three or four vessels or small steamers at the same time.

100 to 500 tons net register and drawing 6 ft.	Reis.
501 " 1,000 "	30,000
1,001 " 1,500 "	50,000
1,501 " 2,000 "	60,000
2,001 " 2,500 "	70,000
2,501 " 3,000 "	80,000

Port Charges.—Light Dues:—60,000 to 100,000 reis in gold.

IMBETIBE.

Accommodation.—In the middle of the harbour there is a jetty about 500 ft. long, provided with a tramway. There is also a smaller jetty at the eastern side of the small creek. The harbour is protected against the prevalent E. and S.E. winds by two breakwaters. A joint-stock company owns four coasting steamers, which run between Imbetibe and Rio Janeiro. This company reserves the east side of the jetty for its own steamers, whilst vessels from Europe have to lie at the west side. On the jetty there are three cranes capable of lifting 5 tons. The depth of water just off the smaller jetty is 16 ft. at lowest tide. Only vessels laden with coal and coming direct from Europe can come direct to Imbetibe, all others having first to clear inwards at Rio Janeiro. There is but little room in this port; vessels do not lie securely, and the anchorage ground leaves much to be desired. The months of August and September are the worst.

Pro Forma Charges on a vessel of 507 Brazilian tons (500 reg.) :-

$$378,500 = \text{£}23\ 13s. 0d$$

Brazil.

IMBITUBA.

Imbituba, lat. 28°20' S., long. 48°45' W., is about 40 miles south of Desterro.

Accommodation.—It is an open port well protected from southerly winds, but fully exposed to winds from the N.E. The soundings are regular, commencing at 10 fathoms, but shoal rather rapidly. The bottom is hard sand, and excellent holding ground. The prevailing wind is from the N.E., commencing with light airs, and gradually increasing in force, lasting from two to three days. Heavy banks of clouds then form to the S.W., accompanied by lightning and rain, and is a certain sign of wind from southward and westward. This generally happens about the beginning of the week, lasting from one to two days. The current follows the wind, southerly winds bringing up water, northerly winds taking it out of the bays and lagoons. The rise and fall of the tide is small, the greatest observed being 5 ft. 2 in. at full and change of moon. During the winter months, from July to November, it blows hard from the N.E., gradually decreasing in force as summer approaches. Vessels drawing 16 ft. water should not anchor in a less depth than 7 fathoms, with both anchors, so as to give ample room to veer away chain when necessary. It is advisable also to drop a kedge anchor astern to keep the vessel in proper position, as the current, generally after the N.E. wind has been blowing, sets round the bay and brings the vessel across the sea. Should the vessel swing to the southerly wind, there is the risk of the anchors fouling, and masters should sight their anchors as soon as possible after. The summer gales are of short duration, and have not force or time enough to bring up a heavy sea, and with good anchors and chains there ought to be no difficulty in riding them out. As a rule, it would not be advisable to send vessels to arrive at Imbituba during the winter months—that is, from the beginning of July to the end of November. Under any circumstances masters of vessels should, after anchoring, take the precaution to go and sound between the vessel and the shore, and satisfy themselves that they have sufficient room, in case it should be necessary to veer cable. Vessels have been lost here by neglecting this precaution. There are two buoys (private) specially adapted for the mooring of vessels up to 600 tons.

There is a railway from Imbituba Point to Tubarao (75 miles).

Supplies, such as eggs and poultry, can be obtained at moderate prices.

MACAU.

Macau, in lat. 5°15' S., long. 36°39' W., is about 3 miles from the mouth of the Rio Amargoso or Assu.

Export.—Salt.

Accommodation.—Vessels drawing 10 to 10½ ft. can cross the bar at high water spring tides. Vessels lie off the town with two anchors down; when loaded they ground at low water without harm, as the bottom is even and soft. On the town side of the river vessels can have their bottoms cleaned, and small repairs can be executed.

Port Charges.—**Tonnage Dues** :—400 reis per reg. ton. **Ballast** taken away from ship's side at 700 to 1,000 reis per ton; if of stones, it is taken sometimes without expense. Loading days are reckoned from the

Brazil—Macau (*continued*).

time when the ship returns to the loading place unballasted. **Drinking Water** :—240 to 320 reis per 90-litre cask at the town ; at the roads, double the above price.

MACEIÓ.

Maceió, in lat. 9°30' S., long. 35°40' W., is the capital of the State of Alagoas.

Population.—33,000.

Imports.—Dry goods, ironware, flour, kerosene, codfish, wire, and agricultural implements.

Exports.—Cotton, sugar, rum, cotton seed, oil cake, cotton-seed oil, maize, rubber, castor seed, hides, and goat and sheep skins.

Accommodation.—Maceió is the best anchorage between Pernambuco and Bahia, and is safe in summer months. From May to September bad weather is often experienced owing to the southerly winds to which the port is exposed. The anchorage is in 4 to 5½ fathoms, about 7 cables from the shore, on good holding ground inside the reef. The wharves are only available for lighters; these hold from 20 to 90 tons d.w. There are thirteen cranes to lift from 1 to 1½ tons and two steam cranes to lift not more than 2 tons each on the wharves. There is one hand crane on the railway pier to lift 10 tons. Supplies can readily be had, but are dear. Water, though good, is very badly supplied by a native company.

Pilotage.—Not compulsory. 30,000 to 50,000 reis.

Port Charges.—**Port Dues** :—800 reis sterling, per net ton. **Light Dues** :—60,000 to 100,000 reis gold, according to vessel's tonnage. **Lighters** : Average, 130,000 reis each, on vessel's account, or according to contract. When goods come f.f.a. lighterage is on account of the receivers of the goods; when loading the lighterage is for account of the shipper. **Stevedore** :—Loading sugar, 100 reis per bag; cotton, 320 reis per bale. Discharging, 7,000 reis per day, general cargo, or as contracted for the entire cargo. **Ballast** :—Sand, 5,000 reis per ton. Stone ballast is taken free of charge from alongside a vessel. Demurrage is at the rate of one-quarter of the price charged for each lighter not discharged the same day. There are three tugboats, and towage of vessels is done by agreement.

Pro Forma Charges on a steamer loading 9,586 bags sugar, and 1,385 bags castor seed for New York, from the port of Maceió (part cargo, second loading port) :—

	Reis.
Hospital dues	42,720
Lighthouse dues, £11 5s. gold	100,000
Commission on gold at 18,000 reis	102,500
Lighthouse certificate	1,400
Custom House pass	7,000
State pass	11,300
Harbour-master's fees	6,300
Custom House note of freight	44,000
State Government note of freight	197,820
Stamps and petties	19,600
Police dept. pass	15,000
Bill of health	40,000
Dispatcher (Federal)	50,000
Dispatcher (State depts.)	25,000
Pilotage in, 40,000 reis, and out, 40,000 reis	80,000

*Carried forward 742,640

Brazil—Maceió (*continued*).

	Reis.
Brought forward	742,640
Towages, 19 for account of steamer at 10,000 reis	190,000
Dunnage, mats, etc.	200,000
Carrying mails	7,000
Boat hire, 4 days at 15,000 reis.	60,000
Stevedore's account for loading	916,380
Consular fees, British	13,660
Consular fees, American	20,000
Ship-chandler's account, provisions	100,000
Telegrams for account of steamer	36,000
Translation of store list	10,000
2½ per cent. commission on estimated freight, £596 10s. = £14 18s. 3d. at 15¾d.	232,780
3 per cent. on advance of freight	79,000
	<hr/> 2,607,460 = £162 18s. 9d.

MAÑAOS.

Mañaos, in lat. 3°9' S., long. 60°5' W., is on the River Amazon, 925 miles from its mouth.

Steamers drawing up to 24 ft. can get up here.

Port Charges.—Ships load and discharge at the floating pontoon, at a charge of 3 reis per kilo. **Stage Charges** :—850 reis per metre of length of the ship per day.

Pro Forma Charges on a steamer of 1,782 tons net register :—

	Reis.
Light dues, £11 5s.	180,000
Custom House charges and gratuities	250,000
English Consul's fees	15,000
American Consul's fees	20,000
Brazilian bill of health	40,000
Translating manifest	300,000
Mañaos Harbour stage charges, 6 days, say	500,000
	<hr/> 1,305,000 = £81 10s. 0d.

MARAGOGIPE.

Maragogipe, in lat. 12°45' S., long. 38°55' W., is on the River Paraguassu.

Accommodation.—The least depth of water in the river up to Maragogipe is 4½ fathoms at half tide. There is 5½ fathoms at the discharging place at low tide.

MARAHÚ.

Marahú is in lat. 14°10' S., long. 39°5' W., about 2 miles S.W. of Muta Point, and about 14 miles from the mouth of the Marahú River.

Export.—Coal.

Accommodation.—Vessels drawing 18 ft. can navigate 12 miles up the river, and a vessel of 357 reg. tons, drawing 14½ ft., has reached this port. The least depth in the middle of the channel is 4 fathoms. Coal is loaded at Juan Blanca, being brought alongside in canoes, each carrying 1 to 1½ tons. Ballast is thrown into the river in 10 fathoms of water.

Port Charges.—There are no expenses of any kind. Cargo is delivered free alongside. Vessels enter and clear at Bahia, from whence a Custom House officer is brought.

Brazil.**MARANHÃO.**

Maranhão, in lat. $2^{\circ}43'$ S., long. $44^{\circ}12'$ W., stands at the N.W. extremity of the island of the same name. Distance from Liverpool by sea, 4,050 miles.

Population.—45,000.

Imports.—Cotton stuffs, linens, woollens, silks, flour, wines, coal, iron, etc.

Exports.—Cotton, rice, sugar, hides, ginger, ipecacuanha, etc.

Accommodation.—Springs rise 16 ft.; neaps 10 ft. The Meio Bank is about 10 miles from the harbour, and as the tides are strong, and the outer edges of the bank steep, it must be approached with caution. The soundings in the vicinity, being irregular, are not a sufficient guide for clearing them at night. By day, however, the position is pointed out by the breakers, which occur in almost all weathers, and may be passed at a prudent distance, taking care to allow for the tides. There is a depth of 15 ft. on the bar at low water. Steamers anchor in 28 to 36 ft. at low water ordinary springs, and sailing vessels in 9 to 22 ft. Loading and discharging is done by means of covered lighters towed by a steam-launch. There are two public wharves, and a crane to lift from 3 to 4 tons. Pilots will always be found about 2 miles N. of Fort San Marcos, but as a rule they board vessels inside the Meio Bank.

Small vessels can be repaired, beached, and hove down; limited repairs to machinery are also executed. There is a gridiron in the Anil River that will take 500-ton vessels of 15 ft. draught at high water spring tides.

The climate is considered tolerably healthy.

Pilotage.—Steamers, in and out. Vessels drawing 3 metres (9 ft. 10 in.) per 100 tons measurement, 16,000 reis; over this, 40 reis per ton; plus for each 30 centimetres ($11\frac{1}{2}$ in.) over 3 metres, 2,000 reis; from 1,000 tons, 30 reis per ton. Sailing vessels pay 30 per cent. more than the above rates.

Port Charges.—**Lighthouse Dues:**—Vessels of 200 tons, 40,000 reis gold; 201 to 400 tons, 60,000 reis gold; 401 to 700, 80,000 reis gold; above 700, 100,000 reis gold. **Custom House Clearance and Licence:**—130,000 to 250,000 reis. **Translating:**—Manifests, 20,000 to 80,000 reis; store list, 5,000 to 10,000 reis. **Lighterage:**—Hire of 50-ton lighter, capable of carrying 450 bags cotton, or 600 bags sugar per day, 24,000 reis; towage (when not done by crew) to and from vessel, 12,000 reis; cotton, loose, per 2 cwt. bag, 500 reis; pressed, 1,200 reis; taking to lighter (unless done by crew), 60 reis; stowing in lighter, 20 reis; on board, 400 reis; sugar, stowing on board, 60 reis per bag of 170 lb.; wharfage, 18 reis; carrying to lighter, 20 reis; stowing in lighter, 20 reis; tarpaulins, per day (3 or 4 required for lighter), 2,000 reis. **Labourers:**—2,500 reis per man per day. **Water:**—3,000 reis per pipe, put in tanks. **Ballast:**—Sand, 3,000 reis per ton, f.o.b. **Consular Fee:**—For clearance, 10s.

MOSSORO.

Mossoro is in lat. $4^{\circ}57'$ S., long. $37^{\circ}8'$ W.

Exports.—Cotton, hides, etc.

Accommodation.—Vessels bound here must first call at Natal.

Brazil—Mossoro (*continued*).

to be cleared, and obtain a Customs officer, as there is no Custom House at Mossoro. There is 13 ft. water on the bar at spring tides, but at low water there is only 4 to 5 ft. There is 18 ft. of water inside the bar. Vessels generally anchor in 3 fathoms water, about 2 miles off the entrance. The best time for loading for a sailing vessel is between May and September, the wind is then S.E., with no swell, and there is a land breeze which enables vessels to get out. There is a tugboat here.

Pilotage.—Pilots are engaged at Pernambuco who take the vessels to the bar, where the river pilots come on board.

No supplies can be obtained and fresh water is scarce.

NATAL.

Natal, in lat. $5^{\circ}45'$ S., long. $35^{\circ}14'$ W., stands on the eastern bank of the Rio Grande do Norte, about 2 miles within the entrance.

Population.—15,000.

Imports.—Dry goods, flour, kerosene, etc.

Exports.—Cotton, sugar, hides, rubber, etc.

Accommodation.—The entrance to the Rio Grande do Norte is formed by an opening in the reef, which covers its mouth and forms a natural breakwater. The harbour embraces an area of 2 square miles, with a depth of 15 ft. on the bar at ordinary springs, and from 14 to $14\frac{1}{2}$ ft. at high water ordinary neaps. The depth in the port at high water ordinary springs is 30 to 36 ft., and 24 to 30 ft. at low water. There is good and well-sheltered anchorage inside the port for vessels, which load and discharge at the wharves, or by means of lighters. There are five wharves, from 55 to 153 ft. long, the greatest depth alongside being $12\frac{1}{2}$ ft. at low water. Steamers of greater length than 300 ft. run a risk of going aground in the channel owing to its S-like shape. The river from the entrance to abreast of the town is from 2 to 3 cables wide, and from 4 to $5\frac{1}{2}$ fathoms deep. No stranger should attempt to enter without a pilot, who can be obtained off the entrance.

Pilotage.—Compulsory. Vessels up to 100 tons reg., and drawing 4 ft., 16,000 reis; second 100 tons, .060 reis per reg. ton; balance of draught, 1,500 reis per foot; balance of registered tonnage, .050 per reg. ton.

Port Charges.—**Mooring and Unmooring:**—15,000 reis. **Wharfage:**—600 reis per metre of space occupied per day. **Entrance and Clearance Fees:**—150,000 reis to 250,000 reis. **Boat Hire:**—6,000 reis per day. **Light Dues:**—From 40,000 reis to 100,000 reis according to size of vessel. **Ballast:**—2,500 reis per ton. **Labour:**—5,000 reis per day. **Brokerage:**— $2\frac{1}{2}$ per cent. **Stowing:**—Steamers: Cotton, 300 reis per bale; sugar, 80 reis. **Discharging Ballast:**—4 to 5 milreis per ton.

Pro Forma Charges on a steamer of 2,069 tons reg., with cargo of general merchandise in and ballast out, drawing 17 ft. loaded:—

	Reis.
Harbour dues	298,880
Brokerage	100,000
Pilotage, in and out	268,400
Boat hire, inside 7,000, to outside 50,000 reis	57,000
Stevedore	405,600
Provisions	71,700
Lighterage	548,600

Carried forward . . . 1,750,180

Brazil—Natal (*continued*).

Brought forward	Reis.
Gratuities and petties	1,750,180
Commissions	175,000
	44,140

1,969,320 = £123 1s. 8d.

Extra charges are included in the above for night work.

PARÁ.

Pará, in lat. 1°28' S., long. 48°22' W., is the capital town of the state of Pará, and stands on the right bank of the River Pará, about 70 miles from its mouth.

Population.—About 100,000.

Imports.—Cotton and woollen goods, preserved provisions, glass, earthenware, cement, knives, tools, machinery, fancy goods, etc.

Exports.—Indiarubber, cocoanuts, hides, and balsam of copaiba.

Accommodation.—The tidal port is 3 miles long by 1 mile wide. There is $\frac{1}{2}$ a mile of quayage, from which project seventeen piers, four of them being public. There are no docks. In the port proper i.e., in front of the town of Pará, no steamer drawing 18 ft. or more can lie to discharge; such vessels must lie about $2\frac{1}{2}$ miles lower down the river. Vessels are usually loaded and discharged by lighters. Vessels of small draught sometimes go to wharves. There are nine cranes to lift from 1 to 5 tons each. Coal is worked by lighters and coal hulks. There is a patent slip with a lifting power of 400 tons, 6 ft. forward and $8\frac{1}{2}$ ft. aft on blocks. There are 4 grid-irons capable of receiving vessels up to 400 tons. There are machine shops, at which steamers can effect small repairs. The depth of water available for vessels entering the port at high water ordinary springs is 36 ft.; in the port 30 ft., and 22 ft. at low water ordinary springs.

There is an acetylene gas buoy, 10 metres high, on Braganza Bank. The pilot station is at Atalaia Point, and a pilot schooner will be found cruising within sight of the Salinas light.

At night vessels requiring a pilot should burn a blue light. The navigation of the River Amazon is now open to the mercantile shipping of all nations. The river and town water is not recommended for drinking. Vessels can perform quarantine here. Ships will be kept in quarantine until the twentieth day after their departure from the last suspected or infected port. Charges for disinfecting 2 to 4 milreis per 1,000 kilos. of cargo. Quays, alongside which sea-going vessels will be able to lie, are now in course of construction.

Pilotage.—Compulsory. For steamers the charge is 195 reis per ton on gross tonnage, on entering and leaving; sailing vessels double this rate. **River Pilotage:**—If proceeding up the Amazon to Mañaos and back an additional charge of 2,000,000 reis.

Port Charges.—**Discharging:**—Coal into lighters, 1,500 reis per ton, less 2 per cent. Discharging ordinary cargo, including labour, lighterage and towing, about 7s. 6d. per ton. Coal supplies may be had; first-class South Wales coal is about £2 10s. per ton. There is a very powerful tug capable of doing ocean towage. **Provisions:**—Bread, 5d. per lb. salt beef 5d. per lb.; fresh meat, 8d. per lb.

Vessels laden with coal never obtain an outward cargo. Sailing vessels

Brazil—Pará (*continued*).

clear in ballast for the Gulf of Mexico or West Indies, in search of homeward freight.

Pro Forma Charges on a steamer of 1,000 tons net reg.:—

	Reis.
Port dues	250,000
Light dues (100,000 reis payable in gold)	180,000
Custom House dues	150,000
Hospital tax	81,120
Translating manifests	200,000
Lighterage on 2,000 tons, including labour and towage of lighters	12,000,000

12,861,120 = £803 16s. 5d.

Pro Forma Charges on a steamer of 1,782 tons net reg.:—

	Reis.	Reis.
Pilotage, in 1,782 tons at 195 reis	347,490	
„ out 1,782 tons at 195 reis	347,490	
		694,980
Translation of manifest and store list		100,000
Light dues, £11 5s.		180,000
Hospital dues		88,800
Other Government charges		50,000
Custom House visit		50,000
American Consul's fee		17,000
British Consul's fee		17,500

1,198,280 = £75 0s. 0d.

PARANAGUA.

Paranagua is in lat. 25°30' S., long. 48°20' W.

Population.—5,000.

Exports.—“Herba matte,” hides, and wood.

Accommodation.—The town is about 15 miles from the bar. The harbour is easy of access, except with S.E. winds. The least depth on the bar at low water is 18 ft. Rise of tides from 3 to 5 ft. regularly. The south channel should be always used in entering. There is a railway wharf with facilities for discharging.

Pilotage.—Pilots can always be obtained. Pilots board the vessels and will indicate where the vessels anchor. Charges, from sea to harbour and vice versa, 90 milreis, for a vessel of 2,500 tons register.

Port Charges.—**Stevedore:**—5 milreis per day. **Provisions:**—Cheap. Beef, 8d. per kilo. Water is taken by ship's boat from the shore, and costs 4 milreis per ton.

Ships loading here receive all cargoes alongside, lighterage being for account of shipper.

PARAHYBA AND CABADELLO.

Parahyba is a port on the river of that name, about 12 miles from the sea. There is a railway connecting Parahyba with Cabadello, at the mouth of the Parahyba River, which is now the port of Parahyba.

Population.—Parahyba, about 30,000.

Exports.—Cotton, sugar, rum, woods, hides, gums, oils, maize, and flour.

Accommodation.—The Parahyba River is only navigable, after the first 3 miles, for vessels of small draught, the depth alongside the quay being only 14 ft. at high tide. Vessels coming up the river require a

Brazil—Parahyba and Cabadello (*continued*).

pilot, as the channel is tortuous and narrow. At **Cabadello**, at the mouth of the river, there is a railway wharf accommodating two vessels at a time, but the inside berth is not good for very long vessels; depth of water, 24 ft. outside berth, 18 ft. inside, at low water. There is also a warehouse for storage of outward goods, and a travelling crane.

The entrance to the port is through a break in the reef, and pilots go off to approaching vessels.

Vessels entering are required to signal their draught in International Code signals; those intending to proceed to Parahyba need not come to Cabadello if they have a clean bill of health.

Pilots object to take vessels in or out drawing over $21\frac{1}{2}$ ft., but vessels have gone out with 22 ft. on high tide.

Pilotage.—Compulsory, both inwards and outwards. For a vessel of 200 tons reg., drawing 12 ft., 66,000 reis; and for every fraction of 25 tons of foot water, increases 2,000 reis; for instance, a vessel of 205 tons, drawing 12 ft. 1 in., pays 70,000 reis. Vessels remaining in quarantine at Cabadello pay one-third less, and vessels going up to the Bridge of Sannahana pay one-third more.

Port Charges.—For **Light Dues** and **Consular Fees**, see **Brazil**. **Stevedore**:—Stowing cotton, 180 reis per bale; sugar and cereals, 900 reis per ton; skins, 240 reis per bale; hides, 80 reis per hide. **Discharging**:—General goods from hold to railway trucks, 1,200 reis per ton; coal and ballast as may be contracted. **Provisions**:—Fresh beef, 800 to 1,000 reis per kilo.; bread, 600 reis per kilo.; vegetables are scarce. Fresh water is supplied by the railway to vessels alongside pier at 30 reis per gallon.

Pro Forma Charges on a British steamer of 1,900 tons, discharging 600 tons coal and general cargo, and loading 850 tons general cargo for Liverpool:—

	Reis.	Reis.
Custom House fees (Federal and State)		814,270
Pilotage, in and out	344,240	
Stevedores' account	3,031,700	
Ship-chandlers' account	314,200	
Telegrams, gratuities, etc.	275,000	
Translating manifest	80,000	
Consular fees	13,040	
Wharfage	410,000	
	<hr/>	4,468,180
		<hr/>
		5,282,450 = £330 5s. 4d.

Pro Forma Charges on a German schooner of 225 tons, discharging alongside quay at Parahyba:—

	Reis.	Reis.
Federal Custom House fees	36,000	
" light dues	135,000	
Dock dues	245,200	
State Custom House fees	42,360	
Dispatcher's fee	50,000	
	<hr/>	508,560
Hire of gangway	100,000	
Stevedores	603,000	
Pilotage, in and out	197,280	
Translating manifest	80,000	
Gratuities	140,000	
Telegrams and petties	187,800	
	<hr/>	1,308,080
		<hr/>
		1,816,640 = £113 10s. 11d.

Brazil—Parahyba and Cabadello (*continued*).

Pro Forma Charges on a British steamer of 1,922 tons reg., loading only about 2,500 tons general cargo for Liverpool, at Cabadello :—

	Reis.
Light dues	241,880
Federal Custom House fees	116,900
State Custom House fees	385,000
Dispatcher	50,000
Pilotage, in and out	292,400
Translation of store list	15,000
Ship chandlers' account	170,600
Consular fees	37,500
Railway fee for wharf, 9 days at 6,000 reis.	54,000
Telegrams and petties	60,000
Gratuities	100,000
Stevedores' account, 1,420 bales cotton at 180 reis	255,600
" " 11,436 packages general, weighing 849½ tons, at 900 reis	764,550
Dunnage	94,000
Winchmen and extras, shifting coal	357,500
	<hr/> 2,994,930 = £187 3s. 6d. <hr/>

PARNAHYBA.

Parnahyba, in lat. 3°6' S., long. 41°50' W., is situated on the river of the same name, about 9 miles from the sea. The maritime ports are Amarração, for light draught steamers, and Tutoia, where ocean-going steamers anchor.

Population.—12,000.

Imports.—Cotton, wool and linen textures, iron, alcoholic liquors, mineral waters, earthenware, glass, chemicals, etc.

Exports.—Raw cotton, cow hides (dry and salted), skins, gum, mangobeira rubber, tobacco, timber, cattle, etc.

Accommodation.—**Amarração Harbour** :—This harbour, which is 6 miles from Parnahyba, has a depth of 14 ft. on the bar at high water ordinary springs, and 5 ft. at low water. The depth in the harbour is 16 ft. at high water ordinary springs, and from 12 to 15 ft. at ordinary neaps. Vessels in the anchorage can only swing one way, and are loaded and discharged by means of lighters. Vessels drawing more than 10 ft. cannot cross the bar. The anchorage ground is opposite the village called Amarração, 2 miles above the bar. **Tutoia Harbour** :—This is a fine bay, with safe anchorage for a large number of vessels. Vessels load and discharge by means of lighters and tug. Depth at Cajueiro (where liners anchor), 12 to 14 fathoms. Depth on the bar at high water ordinary springs, 24 ft. ; at low water, 18 ft.

Pilotage.—Compulsory. Steamers—50 reis per reg. ton. Sailing Vessels—50 reis per reg. ton and 30 per cent.

Port Charges.—**Tonnage Dues** :—Inwards, vessels up to 200 tons, 40,000 reis ; up to 400 tons, 60,000 reis ; up to 700 tons, 80,000 reis ; and vessels of over 700 tons, 100,000 reis. Mail boats and steamers of regular lines pay at the first two ports of call, whether coming direct or on the return voyage, and this payment exempts them in the subsequent ports they touch in the same voyage. **Clearance at Custom House** :—Stamped papers, 200 reis ; on mail boats and merchantmen, 6,000 reis ; shipments in transit to ports in the same State, 2,000 reis.

Brazil.**PELOTAS.**

Pelotas is in lat. $31^{\circ}45'$ S., long. $52^{\circ}30'$ W.

Population.—About 30,000.

Imports.—Cotton and woollen goods, raw and manufactured iron, machinery, coal, and salt.

Exports.—Dry salted meat, hides, horns, calcined bones, bone ash, wool, horse-hair, copper ore, and agricultural products.

Accommodation.—There is a mean depth of water here of about 25 ft. The railway runs alongside the wharf and goods can be loaded direct from train to vessel. Railway communication with all parts of the State. Vessels enter over the bar at Rio Grande do Sul (which see), and have to cross the bar of the Rio São Gonzalo, and also a shallow known as the Setia, both of which have about 10 ft. of water as a rule. Most vessels arriving at Pelotas can only discharge or load part of their cargo, completing at São José do Norte. Vessels load or discharge by means of lighters or alongside wharves at the slaughtering yards.

Pilotage.—Compulsory. Steamers, from the bar of Rio Grande to Pelotas, 70,000 reis; sailing vessels, 30 per cent. more.

Port Charges.—**Clearance Fees** :—About 40,000 reis. **Towage** :—About 1,800 reis per ton. **Boat Hire** :—5,000 reis per day. **Labour** :—About 5,000 reis per day. **Brokerage** :—According to cargo, not more than 5 per cent.

PENEDO.

Penedo, in lat. $10^{\circ}10'$ S., long. $36^{\circ}35'$ W., is on the north bank of the Rio São Francisco, about 22 miles from the bar.

Population.—15,000.

Imports.—Cement, furniture, earthenware, drugs, etc.

Exports.—Sugar, cotton, hides, goat-skins, etc.

Accommodation.—There is a passage over the bar having a depth of 9 ft. at low water. Vessels anchor outside the breakers and wait for a pilot whose assistance is necessary. Inside the bar there is a depth of $4\frac{1}{2}$ fathoms. The river is broad but shallow, and vessels taking cargo to Penedo should never draw more than 10 ft. of water.

Between the months of September and March the river is subject to great inundations, and it is possible for vessels drawing 12 to 14 ft. to get up to Penedo when the river is flooded, but the floods are uncertain. A lighthouse stands on the south point of the river and shows a fixed white light, elevated 69 ft., visible 11 miles off.

Vessels coming to this port should stipulate to have their cargoes free alongside, as sandbanks form in the river, and at times, with a very small draught, they are obliged to take in their cargoes about 10 miles below Penedo.

Pilotage.—Compulsory. 250 reis per reg. ton.

Port Charges.—**Entrance Fees** :—Vessels in ballast, £2. **Clearance Fees** :—1,920 reis for each member of the crew, and 20,000 reis per vessel. **Light Dues** :—£11 5s. (paid at first port of entry in the country). **Towage** :—From £10 to £15 in, and the same out, according to the state of weather, etc.

Brazil.

PERNAMBUCO.

Pernambuco, in lat. $8^{\circ}5' S.$, long. $34^{\circ}55' W.$, is situated at the mouth of the river Capibaribe. Recife, or Pernambuco proper, is built on the peninsula formed by the Rio Biberibe, which extends southwards from Olinda, and is the most mercantile part of the city. The distance from Liverpool is 4,856 miles.

Population.—120,000.

Imports.—Cotton and linen cloths, hardware, cutlery, silks, wine, flour, salt-fish, kerosene oil and machinery.

Exports.—Cotton, sugar, rum, hides, dye-woods, wax and cotton seed.

Accommodation.—This tidal harbour has a water area of $1\frac{1}{2}$ miles with a depth on the bar at high water ordinary springs of 33 ft. with 24 ft. at low water. After crossing the bar there is a sandbank close to the lighthouse that has a depth on it of 14 ft. at low and 22 ft. at high ordinary spring tides. There is good anchorage. Vessels load and discharge at the wharves or by lighters.

There is one steam crane on the Custom House wharf and several hand cranes on private wharves.

Vessels entering, hoist their jack as a signal for the pilot to come out; when leaving, application is made at the pilot's office on the quay, close to the landing. The roadstead, except in the months of June, July and August, when strong southerly winds prevail, is a perfectly safe place for vessels to lay for any reasonable time. The charge for tug-boats is rather high. The Custom quay is no longer used for vessels discharging cargo, excepting one portion near the Recife Bridge, where codfish are landed. Water boats are used for supplying vessels in the harbour at 2,500 reis per ton. Special arrangements have to be made for the supply of water in the outer roads. Small craft can always obtain water at a trifling cost from the quay, by sending their boat for it. Coaling in the harbour is effected without any delay, and steamers continually call here for that purpose, as they meet with so little detention. In the outer roads 15 to 20 hours is taken to coal a steamer. 10s. per ton extra is charged on the coal. The coal is supplied in lighters, ranging as high as 120 tons carrying capacity, and delivered at the rate of 30 tons per hour. There is a dry dock for tugs and lighters 130 ft. long and 27 ft. wide at the entrance. The gates are very primitive and take about an hour to close. There are facilities for effecting ordinary repairs to machinery. There is a slip for building a vessel of 200 tons, and also one for repairing boats of 10 tons.

Pilotage.—Compulsory when entering the port.

Port Charges.—**Light Dues:**—On 1 to 200 tons, 40,000 reis (with 10 per cent.); 201 to 400 tons, 60,000 reis (with 10 per cent.); 401 to 700 tons, 80,000 reis (with 10 per cent.); 701 tons and above, 100,000 reis (with 10 per cent.). **Towage:**—850 reis per reg. ton. **Mooring:**—Hire of launch, 20,000 reis; each man, 8,000 reis; foreman, 12,000 reis. Cotton is delivered free alongside the steamer. **Sand Ballast:**—Delivered free alongside vessel from dredger, 2,000 reis per ton. **Lighterage:**—200 reis per ordinary bag; 500 reis per bale of 20 cub. ft.; 300 reis per bale of 10 cub. ft. **Santa Casa, or Hospital Dues:**—1,920 reis for each seaman of the crew; master and officers not included. A vessel with ten men before the mast has to pay 19,200 reis.

Brazil—Pernambuco (*continued*).

Hull :—Three-masted vessels pay 18,000 reis ; any other vessels pay 12,000 reis. There are a few other small expenses incurred in clearing vessels at the Captania de Porto, Custom House, etc. **Stevedore** :—On beans, mandioca, rice, sugar, coffee, cotton seed, castor-oil seed and maize (in bags), 100 reis each bag ; on cotton, in country-pressed bales of about 160 lb., 500 reis ; for hydraulic-pressed bales of about 400 lb., 750 reis ; coal, 2,000 reis per ton ; hardware and general goods, 1,600 reis per ton ; resin, 300 reis per barrel ; flour, 120 reis per barrel ; kerosene, or lard, 60 reis per cask. **Stevedores' Labourers** :—7,000 reis per day for general cargo. **Provisions** :—Beef is dear at 1,000 reis per kilo. Vegetables scarce, but salads abundant and cheap.

All light and dock dues are payable in gold.

All vessels laden with coal for this port are free of lighterage, i.e. the receiver takes it from alongside—the lighterage on coal is at present 1,500 reis per ton, inside the harbour.

Immediately after the vessel, bringing coal, has given entry, a petition is made to the Custom House authorities to measure the ship, to ascertain the number of metrical tons on which the duties have to be paid ; as soon as payment has been effected, discharge commences, usually 24 hours after arrival, and continues without intermission, from 6 a.m. to 6 p.m. The general gratuity given to Custom House guards for attending the whole discharge of a sailing vessel's cargo is 20,000 reis to 30,000 reis.

Pro Forma Charges on a British steamer of 1,797 net tons, from Buenos Aires via Monte Video, with part cargo, and bound to Liverpool, via Las Palmas :—

Inward cargo, 4,418 bales of beef		weighing net 360 tons
Outward " 596 " country pressed cotton)		
" " 3,000 " hydraulic " ")		645 "
" " 412 bags cotton seed		30 "
	Reis.	Reis.
Pilotage inwards	205,630	
" outwards	208,080	
Hire of chain	20,000	
Gratuity	40,000	
Light, hospital dues, tax on freight, Custom House clearance	740,740	
Cable to Liverpool	9,000	
" Las Palmas	15,760	
Cash to captain	60,000	
Custom House guards	70,000	
Boat hire to outer roads	30,000	
" in port 2½ days	15,000	
British Consul's fees	11,300	
Ship-chandler's account, water and mats	102,000	
Postages, petties	15,000	
	1,542,510	
Discharge account	472,720	
Lighterage, inward cargo	684,440	
Stevedore's account	1,395,360	
Night work and winchmen	488,750	
Extra night work in outer roads	521,000	
Hire of tarpaulins	223,200	
	3,785,470	
Telegrams, Buenos Aires	184,800	
" Parahyba	25,200	
" Maceio	9,320	
Commission on disbursements, 5,737,330 reis at 2½ per cent.	143,430	
Commission on freight and passage money, £742 9s. at 2½ per cent., £18 11s. 3d. at 12d.	371,250	

6,061,980 = £378 17s. 0d.

Brazil.

PORTO ALEGRE.

Porto Alegre is in lat. 30°2' S., long. 51°15' W.

Population.—About 80,000.

Imports.—Flour, manufactured goods, iron, hardware, etc.

Exports.—Hides, groceries, etc.

Accommodation.—The lake from Rio Grande to Porto Alegre in the summer time is accessible to vessels drawing from 7 to 8 ft., and in the winter time to vessels drawing 9 ft. There are several wharves here, but foreign-going vessels are not allowed to go alongside any of the wharves, and loading and discharging are done by means of lighters.

There is rail connection by means of the Porto Alegre and Novo Hamburgo Railway Co.'s line.

Pilotage.—All vessels have to take a national pilot coming up from Rio Grande. Rates according to official tariff.

Port Charges.—Clearance Fees:—According to official tariff.

Custom House Charges:—Passage, 6,900 reis paper; freight 4,400 reis paper for each 1,000,000 reis. **Hospital Dues** (payable by foreign vessels only):—12,000 reis paper for each vessel, 600 reis paper for each sailor on board.

State Government Charges:—Passage, 5,260 reis paper per vessel. **Dispatch:**—Custom House officer, 50,000 reis paper. Gratuity to Custom House guard, 10,000 reis paper. Gratuity to State Government guard, 15,000 reis paper. Use of Government quays, 10,000 reis gold; private quays, 50,000 reis paper, to Municipality.

Consular Fees:—Vary according to different countries, about 90,000 reis paper. **Ballast:**—Sand, 2,000 reis paper per cub. metre. **Labour:**—From 5s. per day, Sundays, holidays, or night time, 10s. **Brokerage:**—Inwards, 200,000 reis; outwards, 5 per cent. on freight.

Pro Forma Charges on a foreign steamer of 510 tons reg.; general cargo in, and ballast out, drawing 10 ft. loaded:—

	Reis.
Harbour dues	31,720
Brokerage	200,000
Pilotage, in and out	310,000
Boat hire, 6 days at 6,000	36,000
Hospital dues, crew of 30 at 600 reis.; ship, 12,000 reis.	30,000
Ballast, 100 tons = 117 cub. metres	234,000

841,720 = £52 14s. 2d.

PORTO SEGURO.

Porto Seguro is in lat. 16°25' S., long. 39°7' W.

Accommodation.—There is a depth of 18 ft. on the bar of the river at high water, but as there is only 11 ft. inside, large vessels never enter. The roadstead is sheltered somewhat by a reef of rocks, with good anchorage, sandy bottom, about a mile from the beach. Cargo is landed or shipped in surf boats, manned by natives. During the rainy season a heavy sea rolls in, and a greater offing should be taken, but with good anchors and chains there is no danger. Water, wood, and supplies can be obtained. There are no dues.

Brazil.**RIO DE JANEIRO.**

Rio de Janeiro is in lat. 23°0' S., long. 43°25' W. Distance by sea from Liverpool, 5,130 miles.

Population.—811,443.

Imports.—Cotton and silk manufactures, flour, wine, hardware, salt fish, butter, coals, cordage, copper, iron, lead, leather, paint, salt, tea, vermicelli, wax, cereals, and all kinds of manufactures.

Exports.—Coffee, hides, horns, manganese, and iron ores.

Accommodation.—The harbour has an area of over 30 square miles. There is practically no bar. At the shallowest part of the entrance there is 33 ft. of water during neaps, and this spot can be avoided. The anchorage is good. Muddy bottom. With the exception of one bank, where there is only 21 ft. during neaps, the depth varies from 30 to 70 ft. The largest vessels can enter and leave at any time. All loading and discharging is done by means of barges from November to May, when vessels must lie 300 yards off the shore. From May to November vessels can go alongside some of the bonded warehouses. These belong to private parties, and afford depths from 12 to 21 ft. The port is provided with a Custom House quay and hydraulic cranes, but these are not made use of by the shipping. Several sunken hulks, not buoyed, are lying in the bay, necessitating a pilot for vessels discharging in the Gamboa. For years there were no public wharves alongside which vessels could discharge, but extensive port works are now in course of construction, and at the end of 1907 quay accommodation amounting to 1,230 metres was completed, and 250 metres built up to low water level. A further large quay extension is projected running parallel to the present line of quays from the Mangue Canal for a distance of 2,200 metres in length and 150 metres in width. This will give a further length of some 4,400 lineal metres for the use of shipping. Warehouses, each fitted with six electric travellers, were built during 1908, and it is proposed to build others all along the line of quays at a distance of 25 to 50 metres apart. Five portable electric cranes have been erected, and a further five are in hand. Very few sailing vessels now enter the port, and the little trade they do is practically confined to timber from the Gulf ports. Steamers can discharge from 250 to 300 tons per day at a cost of 2s. to 2s. 6d. per ton according to the nature of their cargo. The cost of delivering cargo on shore varies from 10s. to 15s. per ton, the cost of a lighter of 100 tons being from £3 to £4 per day. All kinds of supplies can be obtained in abundance. Water is supplied from floating tanks. Merchant vessels calling for supplies only are allowed to enter the harbour without paying anchorage dues, but are subject to all other port dues. The Brazilian Government have a dockyard on Cobras Island, where ships to 2,400 tons are built. There are two dry docks in the yard, the largest is 421 ft. long, 70 ft. wide at the entrance, and 24 ft. deep on the sill at high water ordinary springs. These docks are fitted with sheer legs to lift 60 tons; and two floating cranes, one to lift 60 and the other 50 tons. They are available for merchant vessels when not required by the Government. There are three other shipbuilding firms who own dry docks fitted with cranes and modern machinery, including hydraulic riveters. The largest dry dock is 400 ft. long, 60 ft. wide at the entrance, and 17 ft. on the sill at high water ordinary springs. This dock is to be lengthened to 450 ft.

Brazil—Rio de Janeiro (*continued*).

Vessels are required on entering to pass within hail of Forta Santa Cruz, to answer any questions that may be passed. It is not necessary to shorten sail, and there is plenty of water close to the rocks. All vessels, with the exception of those which have to discharge far up the bay, such as those with cargoes of coal, can now go at once to their final anchorage to receive the Health and Custom House officers' visits, instead of having to wait off Fort Villegaignon as formerly. The master is required to deliver to the health officer all letters and papers without exception. If any should afterwards be found on board, the vessel is fined. In the ship's manifest, the marks, numbers, and contents of all packages must be fully and minutely stated and declared, and a failure to comply with these requirements involves heavy penalties. The contents of every package of cargo must be clearly and distinctly stated.

Time Signals.—Chronometers can be checked here. A signal is made by a red drum, 3 ft. high and 3 ft. broad, on the staff at the observatory on Mount Castello, 226 ft. above high water, collapsing. The drop is 26 ft., and the signal is given at noon, Rio de Janeiro mean time. The drum is hoisted close up 5 minutes before the signal is given. Noon local mean time is equal to 2 h. 52 m. 41·4 s. Greenwich mean time.

Pilotage.—Not compulsory. Vessels usually take an unofficial pilot to conduct them to their berth, at charges varying from 150,000 to 350,000 reis, according to the distance.

Port Charges.—For each ship or steamer entering this port with cargo, the following **Custom House Charges** are incurred:—Entering in Custom House, 100 milreis. Translation of manifest, 7,500 reis for first page, 30 lines; 15,000 reis for two pages; 22,500 reis for three pages; and 3 milreis for each following page. Visiting fee, 20,400 reis. **Lighthouse Dues**:—200 tons reg., 40,000 reis; 201 to 400 tons, 60,000 reis; 401 to 800 tons, 80,000 reis; above 800 tons reg., 100,000 reis gold, at 27*d.* per 1,000 reis. **Hospital Dues**, etc., about 62,800 reis each vessel, and 1,920 reis for each of the crew. Conference of manifest, 50 milreis. Clearing in Custom House, 100 milreis. Gratuities, about 30 milreis. **Bill of Health**:—If required from local authorities, 40 milreis. Vessels calling for orders, £2; and light dues in gold only. **Towage**:—10*d.* per reg. ton. **Agency Fee**:—10 10*s.* **Stevedore**:—Loading, 1*s.* to 1*s.* 6*d.* per ton; discharging, 2*s.* to 1*s.* 6*d.* per ton (coal); general cargo, 3*s.* to 4*s.* per ton. **Ballast**:—Stone, 3,500 to 5,000 reis per ton; earth, 3,000 to 3,500 reis per ton. **Provisions**:—Plentiful, at high prices. Fresh meat cheap. **Water**:—3,500 reis per mark.

COAL CARGOES.

The Rio Customs authorities have no specified time for measuring coal cargoes and receiving the duties, *dues*, etc., payable. They profess to be, and generally, if not invariably, are, ready to take such measurement as soon as the needful request is made. When the measurement is effected, duties, etc., can be paid, and the discharge can commence immediately afterwards. Under favourable circumstances, when there is no obstruction from accumulation of vessels or other causes, it would be possible for a vessel to commence discharging 24 hours after arrival, but not unless she entered early in the morning.

Pro Forma Charges on a steamer, bringing 3,250 tons of coal:—

Brazil—Rio de Janeiro (*continued*).

	Reis.	£	s.	d.
Custom House account	773,180	—	—	—
Argentine bill of health	87,000	—	—	—
Brazilian " "	45,000	—	—	—
British Consul's fees	12,700	—	5	0
Agency fees	—	10	10	0
Cablegrams and postages	154,060	—	—	—
Provisions	481,340	—	—	—
Cash to captain	200,000	—	—	—
Discharging 3,250 tons at 2s.	—	325	0	0
Doctor's fees	150,000	—	—	—
Pilotage	250,000	—	—	—
Gratuities to Customs officers	40,000	—	—	—
	2,193,280	—	137	1 9
		£472	16	9

RIO GRANDE DO SUL.

Rio Grande do Sul, in lat. 32°8' S., long. 52°15' W., is on a spit of land close to the opening of an inland sea.

Population.—25,000.

Imports.—Salt, coal, wine, spirits, flour, oil, lard, candles, and manufactured goods.

Exports.—Hides, dry and salted; horns, bones and bone ash, dried beef, wool, hair, agate, pebbles, beans, Indian corn, tobacco, etc.

Accommodation.—A very dangerous shifting sand bar exists 9 miles below Rio Grande. The bar-boat anchors on the outside edge of the bank, and signals, the depth of water on the bar to the lighthouse, from whence vessels wishing to enter are signalled, the water depth being given on the metric system; while standing off and on, the lead should be used continually, as the water shoals rapidly, and atmospheric changes are frequent and rapid. There are a number of tugboats always ready for service. Captains are allowed to leave their ships at the buoy (halfway between the bar and Rio Grande do Sul), providing their business is urgent, and they land at the Custom House. Vessels bound for Rio Grande do Sul, and drawing not over 12 ft., are towed direct to the usual anchorage, which is sheltered from all winds, except those from N.E., but vessels occasionally drag. If bound for Pelotas or Porto Alegre, vessels anchor at Sao José do Norte in 5 to 7 fathoms, sand and mud bottom, good holding ground, and well sheltered from all winds except S.W. The depth of water on the bar is uncertain, varying according to the wind. With the wind N.E. the water is very low, with wind S. it rises and occasionally gives entry to vessels drawing 14 ft., but draught should not exceed 12 ft. 6 in. to 13 ft. Lighterage is not now necessary, as there is as much water in the harbour channels as on the bar. Vessels wait at the buoy for a rise of water, and are then compelled to proceed to Rio Grande to discharge. Important works for the improvement and deepening of the port are now in course of negotiation.

Pilotage.—From the bar to São José do Norte, 30,000 reis; from the bar or São José do Norte to Rio Grande do Sul, 50,000 reis; Rio Grande do Sul to Pelotas, 90,000 reis; São José do Norte to Pelotas, 70,000 reis. Channel pilotage, 50,000 to 60,000 reis from north to south, and vice versa.

There are a few Government pilots at the bar, whose functions are solely to bring vessels in safety over the bar; their fees are included in the bar dues collected by Government. **Bar Pilotage:**—500 reis per reg. ton.

Brazil—Rio Grande do Sul (*continued*).

Port Charges.—**Anchor-boats** charge for putting out or lifting an anchor—12,000 reis for a vessel of up to 200 tons; 15,000 reis from 201 to 250 tons; 17,000 reis from 251 to 300 tons; 20,000 reis exceeding 300 tons.

Port Dues :—Vessels bound for Porto Alegre or Pelotas usually have to lighten at São José do Norte, and pay all port dues, such as light, bar, pilotage, hôpital, quay, entry, and clearance. At the final port of discharge entrance and clearance are paid, besides other charges. **Quay Dues** :—150 reis per ton. **Labour** :—7,000 reis per day. **Ballast** :—Alongside the quay, 2,800 reis put on board; in the stream at Rio Grande do Sul, 4,000 to 4,500 reis; at São José do Norte, 2,200 reis. **Water** :—2,500 reis per pipe.

Brokerage :—5 per cent. **Towage** :—Over the bar only, inwards, 1,600 reis per ton; outwards, with cargo, 1,250 reis; in ballast, one quarter less. From São José do Norte to Rio Grande do Sul, 800 reis per ton; from the buoy to Rio Grande do Sul, 600 reis; from Rio Grande do Sul to Pelotas, 2,000 reis; from São José do Norte to Pelotas, 1,800 reis; from the bar to Rio Grande do Sul, 2,200 reis. Vessels of more than 200 tons reg. have a deduction of 50 per cent. on the excess.

The British certificate of registry is now accepted by Brazilian authorities as a proof of tonnage.

Previously most vessels completed their cargoes at São José do Norte; during the last few years, the channel having improved, almost all home-ward bound shipments have been made in Rio Grande. The charterers for the cargoes generally pay half of the bar towage outward. Vessels with general cargoes have to pay something more than the above for the translation of the manifest.

CUSTOM OF THE PORT.

The ports of Rio Grande do Sul and São José do Norte are considered two different anchorages. Lay-days are to count from the day after the ship has cleared at the Custom House, and is moored at her discharging or loading berth. Time for shifting anchorages and clearing at the Custom House is not to count. Vessels have to pay the lighterage from São José do Norte to Rio Grande. Thirty running days, Sundays and holidays excepted, are allowed for loading or discharging a ship, if no time is stipulated in the charter-party. The discharge is to be effected by order of the consignees and for account of the ship, if nothing is stipulated to the contrary on the charter-party or bill of lading. Ships are bound to receive the cargo on shore, if no stipulation is made to the contrary. If a vessel is consigned to a firm inwards only, and the captain engages them to procure him an outward freight, he is bound to pay them the respective commission. Freight rates are to be paid according to the exchange of the last day of discharging. The clearing fees at the Custom House, anchorage dues, etc., are to be paid by the ship. The consignees are not responsible for the expenses of the ship. The word *ton* is understood to mean an English ton of 2,240 lb. Time for lightening at São José do Norte is not to count, with the exception of those days the vessel actually discharges. Ballast for stiffening, when required, is to be provided by the ship. The straw, wood for dunnage, hornpiths, horns, bones, and lining hides do not pay any freight, unless it is otherwise stipulated. In addition to the above the following rules have been established: Vessels with salt from Cadiz get their freight per ton of 1,100 litres delivered, considered equal to 1 English ton. They also get

Brazil—Rio Grande do Sul (*continued*).

their freights, when paid on the bill of lading quantity, on the basis of $2\frac{1}{8}$ tons per last. Freights are always stipulated. Freights are usually paid by weight on the Bill of Lading, provided that the consignees accept the weight as given in the Bill of Lading, and in accordance with the exchange of the last day of discharging at one-eighth of a penny above the bank rates; this being considered the current rate for payment. The Government has issued a decree limiting the remuneration of the average adjusters to a maximum of 5 per cent. upon the amount of the general average, when the average is made up judicially, in which case there is a long delay, and many other expenses are attached to it. The averages made up extrajudicially are always preferred, and the fees of the adjusters continue to be made on the contributory values, it varying from 1 to 3 per cent., according to the intricacies of the case, number of the consignees, etc.

Pro Forma Charges on a vessel of 200 tons reg., arriving with coal from Cardiff, and loading with salted hides for Falmouth for orders, drawing 12 ft. :—

	Reis.
Quay dues, annual tax	30,000
„ per voyage	25,000
Towage, over the bar, in }	440,000
„ bar to south }	
Pilotage, bar to south, and vice versa	100,000
Anchor boats	40,000
Translation of manifest and store list	32,500
Pilots for shifting	20,000
¹ Stevedores, on the hides	400,000
Custom House charges, and clearing in and out	300,000
Half towage, town to sea	220,000
Sundries	50,000
	<hr/> 1,657,500 = £103 11s. 10d.

¹ Paid by shipper.

SANTA CATHARINA.

Santa Catharina Island is in lat. $27^{\circ}35'$ S., long. $48^{\circ}30'$ W. Nossa Senhora do Florianopolis is the name of the town. The island is about 30 miles long, and the town is about halfway along the western side, and separated from the mainland by a channel, which is about $\frac{1}{2}$ a mile wide in the narrowest place.

Population.—Island, 36,000.

Imports.—General merchandise.

Exports.—Cereals, hides, and timber.

Accommodation.—The harbour has a depth of 15 to 30 ft. on a mud bottom, but separated from the outer anchorage, Santa Cruz, by a mud bank, 2 miles in length, with 12 to $13\frac{1}{2}$ ft. of water on it. A channel is being dredged. At high tide steamers drawing up to $14\frac{1}{2}$ ft. can pass over the mud bank through the new channel. The outer anchorage is about 8 miles off the town, in 20 to 30 ft., mud bottom. Springs rise 6 ft., and neaps $4\frac{1}{2}$ ft. The place may be approached either round the north or south end of the island. Between the south entrance and the town is another mud bank with 13 ft. of water on it. There is anchorage at the town for vessels drawing up to 22 ft., but vessels drawing more than 13 ft. 5 in. to 14 ft. must lighten off the Ratones Island, where they receive the Customs officer on board. Vessels drawing up to 13 ft. 5 in. can discharge alongside wooden jetties. There is a Customs House on the island at the north end.

Brazil—Santa Catharina (continued).

trance. There is also a patent slip capable of taking vessels up to 400 tons d.w. and not drawing (light) more than 8 ft.

Supplies, such as oxen, pigs, poultry, fish, etc., can be obtained at moderate prices. Other provisions are not always to be found. Repairs can be effected, but they are expensive.

Pilotage.—Not compulsory. For a vessel of 1,000 reg. tons, 40,000 reis or 50,000 reis each way. A pilot should always be employed by a stranger. The pilot station is at Santa Cruz.

Port Charges.—**Light Dues** :—Up to 200 tons, 40,000 reis ; 201–400 tons, 60,000 reis ; 401–700 tons, 80,000 reis ; over 700 tons, 100,000 reis, all in gold. **Boat Hire** :—In port anchorage, 2,000 reis ; off Ratones anchorage, 30,000 reis. **Consular Fees** :—10s. ; with English bill of health, £1. **Brokerage** :—60,000 reis.

Pro Forma Charges on a steamer of 2,227 reg. tons, clearing at Santa Catharina :—

	Reis.
Permission to discharge and manifest	8,300
Translating manifest	50,000
Light dues, gold, 100,000 reis	179,200
Stamp and petitions	25,600
Custom House pass	7,900
Certificate	2,000
Custom House fees	3,900
Brazilian bill of health	40,000
Captain of port and police	4,300
¹ Argentine Consulate	52,800
British Consulate, 10s.	8,000
State Treasury dues	250,000
Gratuities to Customs officers	34,580
Customs officer's visit	30,000
Dispatchers fee for clearing ship	50,000
	<hr/>
	746,580 = £46 13s. 2d.

¹ Cleared in ballast for Buenos Aires.

SANTOS.

Santos is in lat. 23°55' S., long. 46°25' W.

Population.—35,000.

Imports.—General merchandise, cotton and woollen goods, iron and steel manufactures, jute yarn, coal, cement, kerosene, and provisions.

Exports.—Coffee, hides, rubber, and bran.

Accommodation.—Santos harbour is formed on the east by the Island of St. Amaro, which is separated from the mainland by a small river, the Bertioiga, navigable for boats, and on the west by the Island of Eugua Guaçu. The bay is about 3½ miles wide, with 4 to 10 fathoms of water, and on the east side is the principal entrance to the harbour, where vessels may lie in 30 ft. of water, sheltered from all winds except those from south-westward. The anchorage is good on mud bottom, and vessels load and discharge alongside quays, of which there is a total of 6,000 ft. The least depth in the channel up to the town (which is five miles from the entrance) is 30 ft. at low water ; spring tides rise 9 ft. It is a port for the import and export of merchandise in transit to and from the interior of the province of São Paulo, the São Paulo Railway being the principal line by which the goods are distributed. The Dock

Brazil—Santos (*continued*).

Company's quay extends for about 3,000 metres, and as a rule there is sufficient accommodation for all vessels calling at Santos at the same time; this company also owns a slipway with a lifting power of 250 tons. There are fifteen hydraulic cranes to lift $1\frac{1}{2}$ tons each; two to lift 6 tons; one to lift fourteen tons; and one to lift 25 tons.

Pilotage.—Not compulsory. Pilots are found at the "Ponta da Praia" (opposite the fort at the entrance to the channel), and come off in their boats to any vessels in the offing. They charge: Sailing Vessels—Rs. 150,000 in and out. Steamers—Rs. 200,000 to Rs. 250,000 in and out. **Towage:**—Rates for sailing vessels depend upon the tonnage, ranging from £15 for vessels of up to 250 tons to £40 for vessels from 951 to 1,000 tons for all movements in and out. The towage rates for hauling steamers off from the quay is Rs. 100,000 for steamers up to 5,000 tons, and Rs. 200,000 for those over.

Port Charges.—**Hospital Dues:**—Rs. 1,920 per man, including the captain; each mast, Rs. 6,000. **Stamp Duty:**—On freight, Rs. 4,000 plus 10 per cent, for each Rs. 1,000 or part thereof earned (paid by the ship). **Bills of Health:**—About Rs. 15,000 each, except Spanish and Portuguese, which are about Rs. 60,000, the Brazilian coasting Rs. 40,000. **Entrance and Clearance:**—Steamers, Rs. 100,000 in, and the same out. Sailing vessels, Rs. 50,000 inwards, and the same out. **Commission on Freight:**—5 per cent. outwards, and $2\frac{1}{2}$ per cent. inwards. **Stevedore:**—Loading coffee, 80 reis per bag; discharging coal, Rs. 1,000 per ton; general cargo, Rs. 1,500 per ton. **Ballast:**—Rs. 5,000 per ton for stone; sand, Rs. 4,000. **Dunnage Mats** at the present time cost Rs. 36,000 per 100. **Provisions:**—Comparatively cheap. **Wharfage:**—700 reis per metre per day for steamers, and 500 reis for sailing vessels. **Boat Hire:**—Rs. 5,000 per trip. **Labour:**—Rs. 6,000 per day, and easily obtained.

Pro Forma Charges on a steamer of about 1,000 tons reg., inwards and outwards with cargo:—

	Reis.
Cables	125,000
Entering vessel in Custom House	100,000
Translating manifest	50,000
Pilotage	250,000
Tally clerks	64,000
¹ Dock Co.'s account (wharfage), 2,000 tons cargo at 2,500 reis per ton	5,000,000
Stevedore's account, 2,000 tons at 1,500 reis per ton	3,000,000
Stamps and petties	50,000
Boat hire	10,000
Conferring manifest	100,000
¹ Dock Co.'s account outwards	5,000,000
Light dues, gold, £11 5s.	183,500
Hospital dues, 12 masts at 6,000 reis per mast; 24 men at 1,920 reis per man	118,080
Consul's fees—German, 79,560 reis; and Argentine, 77,000 reis	156,560
Gratuities	120,000
Towage	100,000
Stamp, duty on freight	374,000
Cartage on mats, dunnage, etc., 15 carts at 3,000 per cart	45,000
5 per cent. commission	3,300,000
Clearing vessel	100,000

18,246,140 = £1,140 4s. 0d.

¹ In addition there is a charge of 700 reis per day per metre occupied.

Brazil.**TAMANDARÉ.**

Tamandaré quarantine station is in lat. $8^{\circ}43'$ S., long. $35^{\circ}5'$ W., about 15 miles S. of Pernambuco.

Accommodation.—On the bar, which is 1,650 ft. wide, there is 15 ft. water at low spring tides; and at the anchorage, which is well sheltered, there is at least 26 ft., and vessels drawing 22 ft. can anchor close to the shore; bottom mud. The entrance is from the south, through a deep but narrow passage. An old dismantled fort forms an excellent landmark for entering the harbour. Southerly winds bring in a heavy sea.

Expenses on a steamer of 1,378 net reg. tons : **Pilotage**, £13 16s. 6d.; **Quarantine Charge** for disinfection, £15 17s.

VICTORIA.

Victoria, in lat. $20^{\circ}18'$ S., long. $40^{\circ}30'$ W., is situated on Espirito Santo Bay.

Population.—About 8,000.

Accommodation.—Large vessels should anchor in the bay with the college at Victoria in a line with Moreno Point, in 11 to 13 fathoms water, muddy bottom, a mile from the outer sunken reef at high water. At spring tides, $18\frac{3}{4}$ ft. can be carried over the bar of the river, and $12\frac{3}{4}$ ft. at low water, and 15 ft. at high water neaps.

Discharging is slow, as there are only a few lighters; labourers unreliable and expensive.

Provisions.—Dear and scarce.

CHILE.

The Republic of Chile comprises twenty-three provinces and one territory. It has a total area of 307,620 square miles, and a population of 3,248,224 (1907). The executive authority is exercised by the President, the legislative power being vested in the National Congress, consisting of two assemblies, the Senate, and the Chamber of Deputies.

Commerce.—The total trade of the country is of an annual value of about forty millions sterling, the imports being valued at eighteen millions and the exports at twenty-two millions. The whole of this foreign trade is done at present through some fifteen ports, the principal of which are Valparaiso, Antofagasta, Arica, Iquique, Caldera, Coquimbo, Talcahuano, Punta Arenas, and Coronel. The Custom House receipts during 1906 amounted to 103,965,318 dols. gold, an advance of 12,643,575 on the returns for 1905. These receipts were made up of the following items: Export duties on nitrate and iodine, 60,164,050 dols.; import duties, 41,540,403 dols.; lighthouse dues and other inland revenue, 2,260,865 dols. These import duties showed an increase of over nine million dollars for the year, while for the first quarter of 1907 the import duties showed an advance of four million dollars on the amount collected during a similar period in 1906. This increase of trade has caused some congestion at the ports, and a petition has lately been sent to the President by the representatives of the principal steamship companies calling attention to the seriousness of the situation. During 1907 about 14,000 ships entered Chilean ports, with a total tonnage of some 24,000,000.

Mercantile Marine.—The merchant vessels flying the Chilean flag are chiefly engaged in the coasting trade. In 1905 this commercial navy consisted of 42,875 tons steam, and 39,346 tons sail.

Internal Communication.—The railways in Chile are of two classes, the State railways, owned and managed by the National Government, and private railways, managed by the companies owning them. Of the total length of lines open in 1907, about 1,540 miles belonged to the State and 1,748 to the companies. The State railways, with the exception of some 256 miles, have a gauge of 5 ft. 6 in.; on the other portion, and on the lines owned privately, the gauge varies from 2 ft. 6 in. to 4 ft. 8½ in. The roads of the Republic are well kept, and there are 700 miles of navigable rivers.

Currency, Weights and Measures.—100 centavos = 1 gold dollar (peso) at par 18*d*. £1 sterling = about 28 dols. paper. Exchange fluctuates considerably: at present the value of the paper dollar ranges between 8*d*. and 9*d*. The metric system of weights and measures was established by law in Chile in 1865.

Port Dues.—The port charges known as tonnage dues have been abolished, and vessels arriving at ports in Chile are only liable for what is termed hospital dues, namely, 10 cents. per ton reg., and this only once in each calendar year, counting from January 1 to December 31

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Vessels calling for orders and leaving a port without receiving stores or provisions are exempt from this charge.

Lighthouse Dues :—Steamers, 60 c. Chilian gold (about 11d.) per ton reg. Sailing vessels, 30 c. Chilian gold (about 5½d.) per ton reg.

Work alongside Mole :—Steamers, 60 dols. Chilian gold per day first four days (Sundays and feast days excluded). 120 dols. Chilian gold per day after four days. Sailing vessels (not exceeding 1,000 tons reg.), 60 dols. Chilian gold per day first six days (Sundays and feast days excluded). 120 dols. Chilian gold per day after six days. Exceeding 1,000 tons reg., 60 dols. Chilian gold per day first eight days (Sundays and feast days excluded). 120 dols. Chilian gold per day after eight days.

Pilotage :—3 c. Chilian paper per reg. ton.

Towage :—£1 per 100 tons reg.

General Regulations.—On arrival of vessels at a Chilian port, and before communicating with the shore, masters must wait the visit of the Captain of the Port and Custom House officer, to whom the master has to deliver a general manifest of the cargo, or his Bill of Lading, and a note of the provisions on board his vessel. Twenty-four hours are allowed to correct any errors or omissions, and should any appear after this delivery the vessel is subject to a heavy fine. Before sailing for a Chilian port, the Chilian Consul at the port of departure requires to see the list of passengers, the manifest (signed) of the cargo, with its approximate value.

Bill of Health.—All vessels bound to Chilian ports from any part of the world should be furnished with a bill of health, duly visé by the Chilian Consul of the port of departure, as otherwise—by a maritime decree of 1868—they will be subjected on arrival to quarantine.

Customs Regulations.—The master of any foreign merchant vessel, carrying a cargo of foreign merchandise, and arriving at any of the Ports of Entry (*puertos mayores y menores*) of the Republic, or about to proceed to another port of the same class, is required to present a manifest of his cargo, within the space of four hours after anchoring, unless he should declare to the boarding Custom House officer that the vessel is not going to discharge any of her cargo in Chile, in which case no manifest is necessary, and the vessel will have to anchor in that part of the bay which is assigned to vessels not breaking bulk.

Notwithstanding this declaration, if, within the space of four working days after the vessel's arrival, the master should determine on discharging a part or the whole of her cargo, he may do so by presenting a manifest of the packages to be landed.

If, instead of a manifest, the master should prefer giving up his bill of lading, he may do so, in which case a receipt will be given him of their delivery, and no manifest is necessary.

Should there be any cargo for which there are no bills of lading, a list of all such goods must be made out, and the master is also bound to present an exact list of all stores and provisions on board; both said lists to be signed by the master and dated.

Until the manifest is presented, if any, neither purser, passengers, nor any of the crew will be allowed to quit the vessel; for which purpose a Custom House officer will remain on board.

Should no manifest be forthcoming on the expiration of the four hours allowed, the vessel will have to get under way immediately.

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Manifests may be in any language; they must state the number of packages the cargo consists of, and their class and marks, and number as far as possible; list of samples of any value, and list of the vessel's stores; to be dated and signed by the master, but need not mention passengers' luggage, nor any appurtenances of the vessel, nor gold or silver coined money.

The master or the consignee of any vessel may correct the manifest, or substitute another, within fifteen working office hours after its presentation. Either may be done by means of a petition addressed to the head of the Custom House, who will pass it to the Custom House interpreter, who, finding it within the terms, will annex the petition to the manifest it relates to, as also the copy of the printed regulations.

When the manifest is finished, the master will hand it to the Custom House officer on board.

In every case of a master delivering his manifest before the expiration of four hours allowed for this purpose, he must send the Custom House guard on shore by the first boat leaving the vessel.

Bills of lading presented instead of the manifest shall only be retained by the Custom House the time necessary for translation and checking, and be immediately sent to the required department (*Resguardo*) for delivery to the master, who will return the receipt given him for them.

Any vessel in distress, and, on account of imminent danger, requiring immediate assistance at the time of entering the port, the visiting Custom House officer shall remain on board, besides one Custom House guard, who will report to their superior; and in any such case 12 hours are granted for presenting manifest, to reckon from the time of the vessel's anchoring.

Should bad weather come on, the present regulations will be considered as in suspense for the time of its duration.

Any vessel may be searched and inspected at any time by order of the Custom House authorities; and for any number of packages short of manifest, or found empty, or *refilled* with rubbish, the master will be liable to a fine of from 1 dol. to 500 dols. for every package thus short. The amount of such fine or fines will be named and determined by the standing Custom House Committee, called the "*Junta de Comisos*."

In the same manner, packages found in excess and not manifested, will subject the master or his consignees to a fine of from 1 dol. to 500 dols. for every package, as may be determined by said committee.

Any master permitting the supercargo or any of the crew to leave his vessel before the manifest has been presented shall pay a fine of 10 dols. for each person.

Over and above the fine imposed for packages in excess, the master shall be further fined in 10 per cent. on the value of any package or *item* of foreign merchandise omitted in his manifest, with the exception, however, of

Appurtenances and fittings of the vessel itself.

Gold and silver coin.

Luggage.

Merchandise free of duty, on which such master will be fined to the extent of 5 per cent. *ad valorem*.

Any master who omits or changes in his manifest marks or numbers from those expressed in the bills of lading, will be subjected to a fine of 1 dol. for each package so at variance with bills of lading, provided such fines

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to not exceed 100 dols. for the whole cargo. All fines imposed on masters of vessels shall be understood as falling upon them individually, although the Custom House authorities may levy them on the ship in order to obtain payment.

Punctually at the expiration of the four hours above mentioned allowed the master for making out his manifest, a Custom House boat with an officer will proceed on board the vessel to call for said document and land the guard left on board, unless the same should have been given in before. Should no manifest be ready by the time such officer boards the vessel, he will compel her to get under way again, and, in case of any resistance, a notice must be given to the Commander of the Resguardo, in order to acquaint the Captain of the Port and the chief of the place, demanding the necessary assistance.

When a steamer anchors in any of the principal ports, the captain shall immediately deliver to the boarding Custom House officer a list of her stores and provisions, and of the cargo on board according to the bills of lading.

Hints to Shipowners.—Shipowners would be well advised in accepting only time charters for Chile. Delays are constant, and recognized holidays very numerous. A ripple in the bay is sufficient to constitute a "surf day," according to "local custom."

Insurance companies, as well as owners of sailing vessels, calling at Valparaiso between May and September, when northers prevail and wrecks are frequent, should insist that the vessels carry a third anchor with not less than 90 fathoms of chain.

There are, in addition to Sundays, twenty-one recognized holidays, that is to say, seventy-three days of enforced idleness in each year.

For the simple use of five tubs (the vessel using its own fall, winch, etc.), a British ship was recently charged 900 dols., reduced after some trouble to 60 dols. Another British ship was charged and obliged to pay £112 for making her stern fast to a private buoy for forty days, while at the same time she was hanging on her own two anchors.

Freights and Articles of Exportation.—The greater part of the freights are made at Valparaiso, and the following are among the most important articles of exportation: Copper ore and copper in bars, silver, wool, hides, wheat, flour, etc. The loading takes place partly in Valparaiso, and in various other ports in the northern provinces of Chile. Generally the ships go in ballast to the northern Chilean ports, and are forwarded thence directly. Silver is shipped in ingots.

Materials for separating the different parts of the cargo, should it be composed of more than one article, are generally furnished by the freighter. The freight is for *delivered* weight in English tons, of which one-third is usually paid upon arrival of the ship at her destination, and the remainder after the discharge of cargo, in bills of three months, or in cash less 5 per cent.

Sometimes captains are ordered to load saltpetre for ship's account, in case a certain rate of freight cannot be obtained, or the vessel been chartered in Europe for a return cargo of saltpetre. Fluctuations in the price of this article occur so frequently that speculations of this kind are always hazardous. Occasionally it is thought to be more profitable to employ the ship for some time in the coasting trade, in which case a cargo of coal gives the greatest profit.

The great importance which the working of the coal mines in the south

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of Chile has now assumed, and the increased consumption along the coast have exercised a favourable influence upon the navigation. Foreign vessels are permitted to carry coal to any port on the coast, and they avail themselves of this permission whenever the rate of freights for Europe is low. For foreign ships, cargoes of coal for coast ports (Iquique in particular) are of great importance. The consumption of coal extends along the coast as far as San Francisco, and is continually on the increase.

ANTOFAGASTA.

Antofagasta, in lat. $23^{\circ}38'$ S., long. $70^{\circ}25'$ W., is situated on the E. side of the entrance of Morena Bay. It is now the principal port of Chile between Iquique and Valparaiso, and is the port of transit and entrance to all the south of Bolivia, with which it is connected by railway.

Population.—26,445.

Exports.—Nitrate, silver, copper, borax, etc.

Accommodation.—It is a perfectly safe and convenient port, the only drawback being a south-westerly swell. Good hawsers are required to keep the launches alongside. Vessels bound here should always make Jara Head, as the land about there is high and bold. When Jara Head is closed with, steer for the bottom of the bay N. by E. $\frac{1}{2}$ E., and the large "Metal Reducing Works" of Playa Blanca (White Beach) will come full in view, with its high chimney, 300 ft. in height, built upon an eminence 350 ft. or more above sea level, and surrounded by dwelling-houses and other buildings, which cannot escape being seen. These works lie some 4 miles south of Antofagasta roadstead, and when abreast of it the towing and shipping will be clearly visible. The shipping lies about a mile to mile and a half from the port of loading, bearing E., with Jara Head S. by W., and Tetos Point W. by N. $\frac{1}{2}$ N. At night the electric lights of the Nitrate Works in Antofagasta are visible 12 miles distant. The best anchorage is in about 14 fathoms on a rocky and sandy bottom, at the north end of Fawn Ledge, or reef, and about half a mile from the reef. Vessels should be moored with both bow anchors to the southward, 70 fathoms on one and 45 fathoms on the other, with stern stream kedge 90 fathoms, care being taken to moor far enough from the reef to allow the vessel to swing clear as there are strong breezes at times during the night and early morning from N. round to E., and during the day from S. to S.W., especially in summer. In lying off the port at night waiting for daylight, a northerly current running about $1\frac{1}{2}$ miles an hour should be considered. This port is generally taken now as a port of call for orders, when the discharge and loading port is known to be a nitrate one, as Antofagasta is to windward of the nitrate ports.

There are three steam tugs here. There are eight small cranes to lift from 2 to 10 tons, each situated on private moles; also a derrick to lift 2 to 30 tons on the railway company's mole. Vessels are loaded and discharged by means of lighters carrying 25 to 40 tons. Cable communication with Valparaiso and other ports of the world by means of two submarine cables. Telegraphic communication by land wires with all ports on the coast. Steamships call here three times a week going north and south. Fresh water is delivered in port, through iron pipes from the River Loa.

Pilotage.—Not compulsory. Vessels generally employ a pilot for

hile—Antofagasta (*continued*).

mooring. Vessels up to 1,000 reg. tons, 30 dols.; from 1,001 to 3,000 reg. tons, 40 dols.; 3,001 reg. tons and upwards, 50 dols. **Mooring** :—3 c. per reg. ton. (These dues at present are recovered in currency. A petition before Congress to order the recovery of these dues at a fixed rate of exchange, viz., eighteenpence, and it is probable that this will be acceded to, such was the rate of exchange when the tariff was established.)

Port Charges.—Towage :—In the bay, vessels up to 1,500 reg. tons, £10; over 1,500 reg. tons, £1 extra for every additional 100 reg. tons. Towage to sea, 5 pence per reg. ton; to Coloso, 6 pence per reg. ton; to Mejillones, 12 pence per reg. ton; from Mejillones to Antofagasta, 15 pence per reg. ton. **Hospital Dues** :—10 cts. of 18 pence per ton. **Lighthouse dues** :—Steamers, 60 cts. of 18 pence per ton; sailing vessels, 40 cts. of 18 pence per ton. **Launching Nitrate** :—£3 per 1,000 quintals. **Loading and Stowing** :—Nitrate, 12 pence per ton; metals in bag, 12 pence per ton; metals in bulk, 10½ pence per ton. **Discharging** :—Coal in bulk, 12 to 17 pence per ton, according to the ship's facilities and the gear furnished; in bags, the same, with an additional charge of 8½ pence per ton for bagging. **Labourage** :—66 pence per day. **Brokerage** :—50 dols. of 18 pence outwards, and the same outwards. Commission on chartering, 2½ per cent. Collecting freight, 2½ per cent. on amount. **Ballast** :—3 dols. gold per ton (equal to about 4s. 6d. per ton). **Water** :—10s. per ton. **Beef** :—7 to 8 pence per lb. **Doctor's Fees** :—5 cts. of 12 pence per reg. ton.

ARICA.

Arica is in lat. 18°30' S., long. 70°28' W. Distance by sea from Liverpool, 9,660 miles.

Population.—4,000.

Imports.—General merchandise, in transit for Bolivia, and for local consumption.

Exports.—Minerals, sulphur, borax, salt, wool, cotton, and hides.

Accommodation.—This is a good anchorage in an open roadstead of mud and sand, although an occasional heavy swell renders a stern kedge advisable. Anchorage in 6 to 10 fathoms. Loading is done by means of cranes. There are two moles each 250 ft. long, each having a 4-ton steam crane. Steamers discharge from 200 to 250 tons per day, and sailing vessels 100 tons per day.

Railway communication with Tacna. A railway from Arica to La Paz, Bolivia, is now under construction. A new railway pier 650 ft. in length is also to be built.

Arica is healthy except from January to March, when there is a little malaria.

Pilotage.—3 c. per reg. ton, in and out.

Port Charges.—Entrance and Clearance Fees :—38 dols. 50 c. **Towage** :—From Arica to Pisagua or Iquique, £70. **Port Agency** :—50 dols. **Custom House Dues** :—Entry and dispatch, 15 dols. **Hospital Dues** :—10 c. per reg. ton. **Ballast** :—4s. 6d. per 920 kilos. **Labour** :—8 dols. per day; 1 dol. per hour after 6 p.m. **Water** :—10 dols. Mooring and unmooring, 3 c. per reg. ton. **Provisions** :—Fresh beef, 40 c. per lb.; vegetables, 5 to 8 dols. per sack.

Chile—Arica (*continued*).

Pro Forma Charges on a vessel of 1,473 tons, with 5,602 sacs of rice (part cargo) from Rangoon, via Valparaiso :—

	Paper.
	Dols. c.
Captain of the port's fee and sailing license	18 00
Manifests and stamped paper	16 50
Customs bonds for discharge and clearance	4 00
Municipal water tax for stay	10 00
Pilotage, mooring and unmooring	176 76
Cable to Liverpool	18 90
Consular fees	2 00
Labourage	42 00
Beef and vegetables account	252 10

566 07 = £21 4s. 0

BUCHUPUREO.

Buchupureo, in lat. 36°10' S., long. 72°42' W., is 35 miles N. of Tom

Export.—Wheat.

Accommodation.—The best anchorage is to be found in fathoms, with the flagstaff bearing S.S.E. $\frac{1}{2}$ E., three-quarters of a mile distant.

The holding ground is not good, and the roads are exposed; vessels should therefore go to sea on indications of strong winds.

Supplies are scarce.

CALDERA.

Caldera, in lat. 27°7' S., long. 70°54' W., is a well-sheltered bay easy to navigate. The distance from Liverpool by sea is 9,140 miles.

Population.—About 2,900.

Imports.—Coal, coke, iron, bricks, machinery, and general merchandise.

Exports.—Copper, silver, and gold ores; bar silver, gold, copper, and copper regulus.

Accommodation.—Vessels cannot lie alongside the wharf drawing more than 12 ft. Vessels coming alongside the Railway Company's mole have to employ the Company's donkey-engines, which cost 25 dols. gold per day, and discharge not more than 80 to 100 tons. The depth of water alongside the mole on the south side is 12 to 16 ft. Vessels are moored close in to shore in about 4 or 5 fathoms and can discharge 50 tons a day by launches. Owing to the mole having been partly destroyed some years ago, sailing vessels are compelled to employ a pilot for mooring and unmooring. Railway communication is open with Copiapó. The Copiapó Railway Company's workshops execute all kinds of repairs to vessels.

Pilotage.—Outside pilotage, ships up to 1,000 tons reg., 30 dols.; ships from 1,001 up to 2,000 tons reg., 40 dols.; ships over 2,000 tons reg., 50 dols.

Port Charges.—**Mooring and Unmooring:**—3 c. per ton reg. each way. Use of mooring launches, 30 dols. each way. Charges for doing ship's business, 100 dols. gold. **Provisions:**—Beef, 60 to 80 c. per lb.; bread, 15 to 20 c. per lb. **Water:**—Condensed water, 2 c. per Spanish gallon. **Ballast:**—3s. per ton of 1,000 kilos. alongside the vessel; vessels discharging alongside the Company's wharf pay 2 dols. gold per ton of 1,000 kilos.

Chile.**CALETA BUENA.**

Caleta Buena, or Bueno Cove, is in lat. $19^{\circ}55' S.$, long. $70^{\circ}10' W.$

Population.—1,500.

Export.—Nitrates.

Accommodation.—The cove is well sheltered and vessels may moor within a short distance of the moles in 8 to 12 fathoms of water. Vessels in ballast discharge half a mile to the north of the anchorage, where stiffening of nitrate is also supplied. Launch owners do not recognize obligation to supply more than 40 tons stiffening nitrate daily. For this purpose vessels must be moored stem and stern. The depth of water on the ballast ground is from 18 to 22 fathoms. The port has three moles, two for discharging, and one for loading launches, which average 40 tons capacity. The discharging moles are provided with electric cranes, and are capable of dealing with up to 1,000 tons of merchandise per day. Dispatch is not so good as formerly on account of the reduced launching facilities and scarcity of labour. The Agua Santa Co., which owns all the lighters, moles, etc., possesses some thirty-five launches. Towage can be had if required.

Pilotage.—Pilotage dues are levied here according to the Government tariff, 3 c. per ton for mooring and unmooring. Pilotage from the sea for a vessel of 80 to 1,500 tons, 35 dols.; 1,501 to 2,000 tons, 45 dols.; 2,001 to 2,500 tons, 50 dols.; 2,501 to 3,000 tons, 55 dols.

Port Charges.—Launch Hire:—For nitrate, £2 per 1,000 quintals; when supplied to vessels on the ballast ground, £1 extra per 1,000 quintals is charged. **Nitrate:**—Stevedore to steamers, 8 dols. per 1,000 quintals, with food; to sailing vessels, 7 dols. per 1,000 quintals, with food. Labourers, 5 dols. per day; or per sack, hoisted by steam, 3 c.; by hand, 4 c.; per side port, $3\frac{1}{2}$ c. **Coal:**—Labourers, 5 dols. per day; by steam, 30 c. per ton; by hand, 1 dol. 10 c. per ton; sewing, 3 dols. per day.

This being a minor port, dependent on the Iquique Custom House, hospital dues, at the rate of 10 c. per reg. ton, are payable in that port. The dispatch of vessels for other than Chilean ports is also arranged in Iquique.

CALETA COLOSO.

Caleta Coloso, in lat. $23^{\circ}45' S.$, long. $70^{\circ}26' W.$, is 12 miles from Antofagasta.

Import.—Coal.

Export.—Nitrate.

Accommodation.—This is a small and good cove for five or six ships to lie in. The anchorage, about $\frac{1}{2}$ to $\frac{3}{4}$ of a mile from the shore, is in 2 to 15 fathoms on a hard sandy bottom; it lies in the bight to the north of Jara Head, and is easily entered and sailed from without towage. Port business is done at Antofagasta. Provisions and water are obtainable. Cargo is loaded and discharged by means of lighters. Railway connection with Antofagasta.

CARRIZAL BAJO.

Carrizal Bajo is in lat. $28^{\circ}15' S.$, long. $71^{\circ}17' W.$ This is the only lawful port of entry between Huasco and Caldera. A vessel anchoring in any other place between these two points is liable to confiscation.

Chile—Carrizal Bajo (*continued*).**Population.**—2,500.**Imports.**—Coal, coke, ironware, machinery, bricks, and provisions.**Exports.**—Copper regulus, and copper, gold, and manganese ores.**Accommodation.**—Vessels anchor in from 6 to 10 fathoms, and are loaded and discharged by lighters carrying from 20 to 30 tons each. The Railway Company can ship manganese ore by means of shutes and lighters at the rate of 400 or 500 tons a day. The wharves are small—for lighters only. There is good anchorage, protected by a reef which affords shelter from southerly winds for six to eight vessels.

Shipmasters bound for this port should never attempt to run into the cove without the harbour pilot being on board, as the risk of doing damage would be great. When nearing this place, should the pilot not be able to come off in time to pilot her into the cove, ships should come to an anchor to the N.W. of the island, in from 9 to 10 fathoms of water, about two cable lengths from the said island, and there remain to be received by the maritime authorities and the pilot. As there is no lighthouse at Carrizal Bajo, it is not prudent for a shipmaster to stand in for the port after dark, but to keep off and on to the westward of the port, at a distance of about 6 to 8 miles, and to stand in towards morning with the prevailing N.W. and westerly winds.

A conical red buoy marks the rock "Arequipa," which was blown up by a Chilean torpedo boat, and now has $6\frac{1}{2}$ fathoms of water over it. Ships can pass either south or north of the buoy without any danger.

Repairs can be executed at the machine shops of the railway.

Pilotage.—Sailing vessels up to 1,000 tons reg., 30 dols.; from 1,001 to 3,000 tons reg., 40 dols.; from 3,001 upwards, 50 dols. Steamers of any tonnage, 40 dols.

Port Charges.—Lighthouse and Buoyage Dues:—Steamers, 60 c.; sailing vessels, 40 c. gold per reg. ton. Valid for one year from the date of payment. **Fresh Water:**—Brought alongside the vessel, 10 c. per gallon. **Ballast:**—Delivered alongside the vessel, 2s. 6d. per ton. **Agency*:**—£5, and for clearing ships at the Custom House and commission for dispatching, 150 dols. **Hospital Fees:**—10 c. gold per reg. ton, valid for one year from the date of payment for any Chilean port. **Provisions:**—Fresh beef, 80 c. per lb.; vegetables can be had at moderate prices; merchandise or any kind of stores can be purchased for nearly the same price as in Valparaíso. **Doctor's Fee:**—For the whole time a ship is in the port, conventional.

Ships generally get a very good dispatch, both with inward and outward cargoes. For special dispatch, before the time given in charter party, £20. Vessels are nearly always sent here to load or discharge from Valparaíso, by merchants there.

CHAÑARAL DE LAS ANIMAS.

Chañaral de las Animas is in lat. $26^{\circ}19'$ S., long. $70^{\circ}45'$ W., about 65 miles to the S. of Taltal, and 46 miles N. of Caldera.

* The £5 for Agency is always charged in Valparaíso by the consignee there, but never in this port to ships bringing coal or any other merchandise. The only case when Agency has been charged was when ships came to load manganese ore, when it was £5 5s., part of the commission for clearing and dispatching the ship.

Chile—Chañaral de las Animas (*continued*).

Population.—3,500.

Imports.—Coke, coal, lumber, and general merchandise.

Export.—Copper.

Accommodation.—The bay is large, but open to the west and north-west, and at times a heavy swell sets in. The depth of water is from 10 to 15 fathoms. There is good anchorage, the best and safest being in 6 to 7 fathoms between Datum and the Railway Co.'s piers, ahead of the quarry pier. It is not a port of entry, but a permit can be obtained from the Valparaiso Customs for a direct call to be made.

Pilotage.—There is no recognized pilot, but masters with Chilean certificates are allowed to direct ships into the port.

Port Charges.—**Mooring and Unmooring:**—30 dols. to 50 dols. Chilean currency, according to the size of the vessel. **Ballast:**—Sand, 3s. per reg. ton placed alongside. **Commission:**—75 dols. to 100 dols. Chilean currency, according to the size of the vessel. **Provisions:**—Fresh beef, 25 c. to 30 c. per lb. **Drinking Water:**—3 c. per gallon at the pier.

COBIJA.

Cobija is in lat. 22°42' S., long. 70°13' W. This is a minor port and is not now used.

CONCEPCION BAY.

Concepcion Bay is in lat. 36°58' S., long. 73°5' W.

Population.—60,676 (Town).

Imports.—General merchandise and agricultural machinery.

Exports.—Wheat, barley, wool, hides, lentils, honey, etc. Wheat is shipped in bulk, and bags of 100 kilos. each.

Accommodation.—The bay is the finest on this coast. It has good anchorage everywhere, abundant space, and is well sheltered. There are three ports inside, viz., Talcahuano, Penco, and Tomé. The bay has two entrances divided by the island of Querequina. The smaller entrance affords a depth of 40 to 45 ft. : and the larger a depth of 115 to 130 ft.

Talcahuano.—Vessels anchor in 4 to 6 fathoms at 6 to 7 cable lengths from the shore. Steamers and sailing vessels are moored and unmoored under the supervision of the captain of the port. Vessels are moored fore and aft with bow to the north all the year round. Ships are loaded and discharged by means of lighters. Vessels loading grain can on an average ship 120 tons a day.

The Chilean Government has, for the use of the Naval Station, a floating crane to lift 50 to 60 tons, and two stationary cranes to lift 20 tons each. The floating crane may be used for merchant vessels by permission. There are also four stationary steam cranes to lift 2 tons each and one stationary crane to lift 5 tons.

The Government Dock is in two sections, with length on blocks of 330 and 259½ ft., or 395 and 193½ ft. The inner entrances are 83 and 63½ ft. wide respectively.

There is a hydraulic slip for vessels of 2,000 tons.

The Government will shortly launch a floating dock capable of handling vessels up to 2,000 tons; this, by accommodating the smaller craft of the

Chile—Concepcion Bay (*continued*).

navy, may leave the dry dock more at liberty for the use of merchant vessels. Supplies of all kinds are obtainable, vegetables, flour, meat, potatoes, etc., being cheap. Coal is not obtainable. Steamers coal in Lota and Coronel, to the south of Talcahuano.

Pilotage.—Optional.

Port Charges.—**Light Dues** :—60 c. per reg. ton (Chilian gold), payable once a year. **Hospital Dues** :—10 c. per reg. ton (payable once a year). **Doctor's Fee** :—Optional; 4 c. per reg. ton. **Mooring** :—With use of a steam launch, etc., 2½d. per reg. ton. **Unmooring** :—With use of a steam launch, etc., 2½d. per reg. ton. **Captain of Port (Pilot), Unmooring** :—3 c. per reg. ton. **Captain of Port, Mooring** :—3 c. per reg. ton. **Good Water** :—1 dol. 50 c. per 100 gallons (variable). **Discharging Ballast** :—3 dols. 50 c. per ton (variable). Labourers on board, 5 dols. a day with food, or 6 dols. a day without food.

Pro Forma Charges on a steamer of 4,290 reg. tons :—

	Paper.	Dols.	c.	£	s.	d.
Coast cables, petties, stamped paper used in dispatch through Custom House, etc.		28	35			
Cash to captain		3,657	90			
Cables to England		267	55			
Advertisement for coast cargo		28	00			
Labour for discharge		7,140	15			
Flour		57	50			
Pilotage, inwards and outwards		217	34			
Provisions		974	75			
Hospital dues, 10 c. gold per ton		570	95			
Lighthouse and buoy dues, 60 c. per ton		3,429	75			
Crew list		2	00			
		16,374	24	=	614	0 8
Agency fee					5	0 0
					£619	0 8

Tomé.—This port is situated just inside the large entrance to the bay, its staple industry being the manufacture and export of wine and flour. There is a jetty 50 yards long. It is a minor port.

Penco.—This is a minor port situated on the east side of the bay, halfway between Tomé and Talcahuano, and is connected by a branch line with the main railway system of the country. The staple industry is sugar refining and the export of wheat.

All vessels going to Penco or Tomé have to enter and clear through Talcahuano Custom House.

CONSTITUCION.

Constitucion, in lat. 35°30' S., long. 72°30' W., is situated on the right bank of the River Maule, about a mile from its mouth.

Population.—8,000.

Imports.—General merchandise.

Exports.—Food-stuffs.

Accommodation.—The depth of water on the bar varies from 8 to 15 ft. according to season. Springs rise 5 ft. and neaps 3 ft. Moorings for two to three steamers.

Constitucion is no longer a "Puerto Mayor," the trade being confined to small coasting steamers which call as occasion offers.

Chile.

COQUIMBO.

Coquimbo is in lat. $30^{\circ}0'$ S., long. $71^{\circ}28'$ W. Distance by sea from Liverpool, 8,965 miles.

Population.—19,625.

Imports.—Portland cement, timber, hardware, and Manchester goods.

Exports.—Copper, gold, silver, salted hides, sheep-skins, goat-skins, chinchillas, etc.

Accommodation.—The anchorage is well sheltered from the northerly winds, and of an average depth of 8 fathoms. There are no docks. Vessels of any draught can enter the port. There is no bar. The length of the bay (north and south) is 7 miles, the width (east and west) is 3 miles.

The Railway Co.'s premises have a frontage of sea-wall 600 yards long (containing in addition four moles), at any part of which lighters can discharge; there are facilities for discharging 300 tons a day. Work can go on at all tides. There are four cranes to lift from $\frac{1}{2}$ to 12 tons each on the Railway wharf. There is also the Custom House wharf, or sea-wall, which is about 300 yards long; from this the landing place projects. Three cranes to lift 2 tons each on the Custom House wharf. In addition there is a small private mole, available for launches at high water only. One crane to lift 2 tons.

There is 16 to 18 ft. of water at low tide along the Railway Co.'s sea-wall, and 15 to 20 ft. alongside the Custom House wharf; but vessels do not now go alongside either, as was formerly the practice. All loading and discharging is done by lighters of 15 to 45 tons each. Ballast is conveyed from beach in lighters. There is a strong undertow close in shore.

Slight repairs can be done by the State Railway.

La Serena, the town of which Coquimbo is the port, is on the N.E. side of the bay, about 7 miles from here.

Time Signals.—Chronometers can be checked. A black cone is hoisted, half way up the mizenmast of the training ship *Abtao*, at five minutes before the signal, close up at 2 m. 30 s. before, and dropped at noon local mean time, equal to 4 h. 45 m. 20·7 s. Greenwich mean time. This signal is unreliable.

Pilotage.—3 c. paper per reg. ton, plus 45 dols. paper.

Port Charges.—**Lighterage**:—Loading or discharging, 2 dols. per ton. **Labour**:—3 dols. on shore; 6 dols. on board with rations. **Ballast**:—4 dols. per ton. **Hospital Dues**:—10 c. gold per reg. ton (payable once a year). **Light Dues**:—40 c. gold, per reg. ton (payable once a year). **Steam-tug**:—About 150 dols., according to size of vessel. **Commissions**:—Collecting freight, $2\frac{1}{2}$ per cent.; procuring freight, 5 per cent. Agent's commission, entering and dispatching vessel, about 100 dols. **Water**:—4 dols. per mark (about 210 gallons). **Provisions**:—Beef, 55 c. per lb. Vegetables abundant and cheap. **Shipbroker**:—Entering and clearing, 75 dols. silver. **Store Rent**:—3 c. per 100 kilos. per month.

Pro Forma Charges on a vessel of 1,225 tons net reg. discharging about 3,000 tons of coal:—

Chile—Coquimbo (*continued*).

	Paper money.	
	Dols.	c.
Pilotage inwards	140	35
Pilotage outwards	140	35
Butcher's account	1,691	60
Consular fees	41	60
Water	164	00
Captain of the port roll	5	00
Stamped paper, Custom House	15	00
Hospital dues	180	00
Ballast	1,900	00
Light dues, 735 dols. gold	1,470	00
Premium on gold, 108 per cent.	988	20

6,736 10 = £252 12s. 1d.

CORONEL.

Coronel is in lat. 37°2' S., long. 73°5' W.

Population.—About 5,000.

Accommodation.—The anchorage, in a muddy bottom close to the beach, with 7 fathoms of water, is good, and is well sheltered from the northerly gales which prevail during the winter months, the sea being quite calm. It is the principal coaling port in Chile. Railway communication with Concepcion, Santiago, and Valparaiso. There is a submarine cable station, and communication can be had with all parts of the world. European mails are landed and embarked here. The coaling is done from lighters, and 100 tons an hour can be supplied to steamers. The weather is seldom so bad as to prevent coaling. Water and provisions in abundance can be had at very moderate prices. There are four large coaling establishments, each with its own distinct wharf. Slight repairs to machinery can be executed.

Port Charges.—Vessels only pay dues when they receive or discharge cargo; the rate is 70 c., gold, per reg. ton. Vessels calling for orders or taking in bunker coal only pay the port agency fees, amounting to about £2 2s., which embraces Custom House work, etc.

Pro Forma Charges on a steamer of 1,851 net reg. tons, only calling for bunker coal and provisions :—

	Paper Currency.		£ s. d.	
	Dols.	c.		
Stamp paper and clearance at Custom House	5	80	—	—
Captain of port, roll dues, 5 dols.; boat hire, 5 dols.	10	00	—	—
Cable to England	17	70	—	—
Paid water account, 22½ Spanish tons at 2 dols.	45	00	—	—
Agency dispatching commission	—	—	2	2 0
Cash to captain	368	00	—	—
Paid coal account, 666 tons at 25s. per ton	—	—	832	10 0
Stevedore for stowing in bunkers 666 tons, at 6d. per ton.	—	—	16	13 0
	446	50	= 16 14 10	
			867	19 10
			21	14 0
Commission, 2½ per cent.			£889	13 10

CURANIPE.

Curanipe, in lat. 35°54' S., long. 72°40' W., is about 20 miles S. of Constitution.

Exports.—Wheat and flour.

Chile—Curanipe (*continued*).

Accommodation.—Curanipe is not a safe port to load at from June to October, as strong N. gales often occur during these months, and the surf prevents communication with the shore from ten to fifteen days. There are two mooring buoys laid down in 6 to 12 fathoms of water, about $\frac{1}{2}$ a mile from the town. Ballast is thrown overboard as the cargo is taken in. In the winter time vessels should always be ready to slip and proceed to sea. Masters are not allowed to land in ship's boats; cargo is brought alongside in boats carrying from 5 to 8 tons.

Port Charges.—Labour:—2 dols. per day with victuals. **Water:**—Fresh water, 3*d.* per gallon, put on board. Vegetables are scarce and about 6*d.* per lb.

Pro Forma Charges on a barque of 575 tons reg., loading 850 tons of wheat:—

	Gold Dols.
Beef, water, vegetables, etc.	171
Commission	50
Labourage and boat hire	30
Incidental expenses	15
	<hr/>
	266 = £19 19 <i>s.</i> 0 <i>d.</i>

Anchorage and port dues had been paid at Valparaiso.

DUENDES.

Duendes is in lat. 21°55' S., long. 70°8' W., about 1 $\frac{1}{2}$ miles N. of Tocopilla.

This port is now of no interest to shippers.

EL COBRE.

El Cobre is in lat. 24°25' S., long. 70°35' W.

Accommodation.—There is a good anchorage with southerly winds, in 7 to 17 fathoms. No fresh water is procurable. This is a caleta, and closed to all foreign trade.

GATICO.

Gatico is in lat. 22°35' S., long. 70°12' W.

Population.—2,600.

Imports.—Coal, coke, and machinery.

Export.—Copper.

Accommodation.—The anchorage is in 6 to 22 fathoms. This is a minor port, but the Customs officials attend to transact ship's business. There is a steam railway for loading.

Pilotage.—Not compulsory. Rates according to agreement.

Port Charges.—Light and Beacon Dues:—See **Chile.** **Hospital Dues:**—See **Chile.** **Boat Hire:**—Rates according to agreement. **Labour:**—6 dols. (Chilian) per day. **Ballast:**—Price according to arrangement.

GUALAGUALA.

Gualaguala, in lat. 22°55' S., long. 70°15' W., is about 10 miles N. of Mexillones.

Chile—Gualaguala (*continued*).

Accommodation.—There is good anchorage in 7 fathoms. This is a minor port, and vessels cannot enter unless previous permission has been obtained from the Customs authorities at a port of entry, and vessels must carry the necessary Custom House officer to receive and clear the ship.

Leading Bluff, at the entrance to Mexillones Bay, is a good landmark for Gualaguala.

The copper ore is brought from the mine by a tramway to a mole with a shoot, under which boats can be safely moored.

GUAYACAN.

Guayacan (or Herradura de Coquimbo), in lat. $30^{\circ}5'$ S., long. $71^{\circ}30'$ W., is about a mile S. of Coquimbo.

Population.—1,450.

Accommodation.—Vessels anchoring on the Guayacan side of the bay should not go into less than 6 fathoms, and should moor with a stern anchor within about a cable length of the shore. Ships leaving must warp over to abreast of Herradura. It is not prudent to leave the anchorage without a good commanding breeze.

Vessels bound here must first call at Valparaiso or Coquimbo. Vessels can obtain quick dispatch; steamers load up to 500 tons of bar copper in one day.

Pilotage.—A pilot should always be taken by outward-bound ships as there is often a strong swell inwards, with southerly winds, which sometimes obliges vessels to return to their anchorage. With a pilot-boat and one of the ship's boats a vessel can generally get out. This only applies to winter months; in the summer months vessels can enter and leave with safety.

Port Charges.—Towage:—Towing vessels out of the bay, 100 to 150 dols. according to size of vessel. **Water:**—Placed alongside, 2 c. per gallon, or 2 dols. per ton. **Ballast:**—4 dols. paper per ton.

For other charges, see **Coquimbo**.

HERRADURA DE CARRISAL.

This port is now closed.

HORCON.

Horeon, in lat. $32^{\circ}49'$ S., long. $71^{\circ}30'$ W., is no longer used as a port.

HUANILLO.

Huanillo, in lat. $22^{\circ}25'$ S., long. $70^{\circ}12'$ W., is 6 miles N. by W. of Cobija.

Accommodation.—There is good anchorage in 16 fathoms, a short distance from the mole.

The mining and smelting establishments are near the shore, and the metals are carried over a tramway along an excellent mole to a shoot, under which boats can lie at all times in safety.

Water is obtained from a distilling apparatus.

HUASCO.

Huasco is in lat. $28^{\circ}38'$ S., long. $71^{\circ}25'$ W.

Chile—Huasco (continued).

Exports.—Copper and ores.

Accommodation.—This is merely a port of call, not a free port, and vessels are not allowed to enter—coming from a foreign port—with the object of discharging cargo on which duties are levied, or loading minerals, without previously being provided with a licence from the Valparaiso Custom House.

The anchorage is in 6 to 7 fathoms, sandy bottom, about $\frac{1}{2}$ a mile from the landing place. It is an inconvenient anchorage, exposed to northerly winds, which, however, do not often occur in violence. Vessels are loaded and discharged by means of lighters.

The P.S.N. Co.'s steamers call here.

Fresh water can be obtained in barrels by ship's boats.

IQUIQUE.

Iquique is in lat. $20^{\circ}15'$ S., long. $70^{\circ}10'$ W. Distance by sea from Liverpool, 9,475 miles.

Population.—44,500.

Imports.—Bags, coal, twine, machinery, oils, and general merchandise.

Exports.—Nitrate, silver, and copper ores.

Accommodation.—There is good anchorage in 11 fathoms, being sheltered from southerly winds. Cargo is discharged by means of lighters. Boats are not allowed to come alongside before the port captain has been on board, under a penalty of 50 dols. Rise and fall of tide from 1 ft. to $2\frac{1}{2}$ ft. Repairs can be executed. There are derricks to lift 20 and 5 tons. Fresh provisions can be obtained at moderate price.

Pilotage.—Not compulsory. Steamers—40 dols. paper. Sailing vessels—40 dols. paper. **Towage:**—5*d.* in and out per ton reg.

Port Charges.—**Entrance Fees:**—5 dols. paper. **Clearance Fees:**—5 dols. paper. **Light Dues** (payable in gold):—Steamers—60 c. per ton reg., once in twelve months. Sailing vessels—40 c. per ton reg., once in twelve months. **Mooring:**—3 c. paper per reg. ton, plus launch hire, 20 dols., or boat hire, 30 dols. **Boat Hire:**—10 dols. per day. **Ballast:**—From shore, including lighterage, 6 dols.; ship to ship, 2 dols. 50 c. **Labour:**—Working coal, from 1 dol. 30 c. to 1 dol. 60 c. per ton. Loading nitrate, $3\frac{1}{2}$ c. to 5 c. per sack. **Brokerage:**—£5 to £7 for sailing vessels; £10 to £15 for steamers. **Hospital Dues:**—10 c. gold per ton reg., steamers and sailing vessels, payable per calendar year. **Stevedore:**—Loading, 7 dols. per 45 tons for sailing vessels, and 8 dols. 50 c. for steamers. **Launches:**—Can be hired at £3 per 45 tons for loading nitrate; also for discharging ballast at about 1 dol. 50 c. per ton.

JUNIN.

Junin, in lat. $19^{\circ}45'$ S., long. $70^{\circ}11'$ W., is situated about 18 miles N. of Caleta Buena, and 7 miles S. of Pisagua; it is easy of approach, and distinguished, from a great distance at sea, by a very clearly marked V-shaped cart-road on the hillside, which leads to the Alto of Junin, a height of 2,200 ft. above sea level.

Population.—800.

Chile—Junin (*continued*).**Imports.**—Coal and gunny bags.**Export.**—Nitrate.

Accommodation.—Vessels moor about $\frac{1}{4}$ of a mile from the shore, in 12 to 16 fathoms of water. The anchorage is very fair, the bottom being rather rocky, but improving rapidly by reason of the ballast which the vessels discharge. There are three moles; two of iron, of which one is for shipping nitrate and the other for discharging purposes. The remaining one is of stone, and is used for discharging. Lighters, of which there are a good number, convey cargo to and from the vessels and moles. As far as the facilities go, a good dispatch can nearly always be counted on, both as regards vessels loading and discharging. Any repairs can be carried out which do not require the vessels to be docked. Telegrams can be sent to all parts of the world from Pisagua, with which Junin is in telephonic communication. Coasting steamers call here regularly once a week, and other steamers frequently. Provisions of all kinds are obtainable at moderate cost.

Pilotage.—Not compulsory, but is usually accepted, 3 c. per reg. ton

Towage:—To and from the sea, 3*d.* and 2*d.* respectively per reg. ton
Towage to other ports according to agreement.

Port Charges.—**Entrance Fee:**—Including stamped paper, etc., 20 dols. **Clearance Fee:**—With charges, 25 dols. **Hospital Dues:**—10 c. gold per reg. ton per calendar year. **Light and Buoy Dues:**—Steamers, 60 c. gold per reg. ton per twelve months; sailers, 40 c. gold per reg. ton for the same period. **Mooring and Unmooring:**—3 c. per reg. ton. Use of mooring launch (each time), 25 dols. **Water:**—Fresh water, $\frac{1}{2}$ *d.* per gallon. **Stevedore:**—Loading nitrate, 7 dols. gold per 1,000 quintals for sailing vessels, and 1*s.* or 80 c. gold per ton (including labourers but not winchmen) for steamers. Stevedore's food, unless supplied by the vessel, 2 dols. for steamers and sailing vessels. **Labour:**—Per day, 6 dols. gold. Winchmen, 6 dols. gold per day. Unloading coal, Australian or English, 1 dol. 25 c. gold per ton. Cards and similar kinds, 1 dol. 45 c. gold per ton. **Boat Hire:**—Including labourers, etc., 50 c. each per day. **Winch Hire:**—3 dols. per day. **Ballast:**—Discharging ballast in anchorage, 15 c. per ton, paid to port officials. **Medical Attendance:**—1*d.* per reg. ton.

Pro Forma Charges on a steamer of 2,359 tons reg., loading a full cargo of 5,555 tons nitrate of soda:—

	Paper.
	Dols. c.
Cash to master	100 00
Consular fees	192 00
Pilotage, etc.	231 54
Entrance, etc., in customs	20 00
Postage and carriage of correspondence	20 00
Copy of protest made in Arica	33 75
Dispatches and clearance	25 00
Agency boat hire	10 00
Cablegrams	156 80
Port agency commission on Nitrate Charter, £5	133 33
Loading account, 5,555 tons	8,382 66
Water	156 00
Beef account	890 00
Stores account	126 00
Vegetables account	50 00

Chile.

LARAQUETE.

Laraquete, in lat. $37^{\circ}20'$ S., long. $73^{\circ}15'$ W., is situated about 5 miles south of Lota.

This port is now closed.

LEBU.

Lebu is in lat. $37^{\circ}43'$ S., long. $73^{\circ}40'$ W.

Population.—4,500.

Export.—Coal.

Accommodation.—There is a depth of 7 to 8 fathoms at high water, of 6 to 7 fathoms at low water, and of 6 fathoms at lowest spring tides. This is the most southerly coal mining port in Chile. Coal is supplied from the mines, and vessels lying in the roadstead can be loaded by means of launches. Only small launches can cross the bar.

Pilotage.—Not compulsory. Steamer, 50 dols. (Chilian currency). Sailing vessels up to 1,000 tons, 30 dols.; 1,001 to 3,000 tons, 40 dols.

Port Charges.—**Mooring** :—3 c. per reg. ton. **Clearance Fees** :—Crew list, 2 dols. **Boat Hire** :—About 10 dols. **Light Dues** :—See **Chile**. **Ballast** :—About 3 dols. per ton. **Labour** :—5 dols. per man per day.

LLICO.

Llico, in lat. $34^{\circ}50'$ S., long. $72^{\circ}10'$ W., is about 20 miles N. of Constitution.

This port is now closed.

LOA RIVER.

Loa River is in lat. $21^{\circ}20'$ S., long. $70^{\circ}5'$ W.

Export.—Guano.

Accommodation.—There is good anchorage, with the Chapel near the entrance bearing N., in 8 to 12 fathoms mud, $\frac{1}{2}$ a mile off shore. Loa River used to form part of the boundary line between Bolivia and Peru. The water here is bad.

LOTA.

Lota is in lat. $37^{\circ}12'$ S., long. $73^{\circ}10'$ W.

Population.—12,000.

Exports.—Coal, bricks, copper, and raw hides.

Accommodation.—Vessels bound here during the summer months should always take the passage between Santa Maria Island and the mainland.

In the summer time the prevailing winds are southerly; in winter, north-westerly, with rain and cold weather. In the winter vessels often cannot load for days, owing to the heavy surf; and in summer vessels are seldom able to load after 2 p.m., as at that hour the southerly winds set in fresh, and the lighters cannot lie alongside owing to the heavy sea.

Two vessels, drawing 20 ft. of water, can load alongside the iron jetty; 1,000 tons of coal can be loaded in 10 working hours.

Vessels discharge their cargoes into launches. Large vessels anchor in

Chile—Lota (*continued*).

5½ to 6½ fathoms close to the shore. Telegraphic communication with all parts of the world. Ordinary repairs can be executed. This is a minor port.

Pilotage.—Not compulsory. **Harbour Pilotage** :—Rates as follows viz., Vessels up to 101 tons, 5 dols.; 101 to 200, 7 dols.; 201 to 300, 9 dols.; 301 to 400, 11 dols.; 401 to 500, 13 dols.; 501 to 600, 15 dols.; 601 to 700, 17 dols.; 701 to 800, 19 dols.; 801 to 1,000, 21 dols.; 1,001 to 2,000, 23 dols.; and above 2,000 tons, 25 dols.; but, as Lota is an open bay, it is a very rare occurrence for any vessel to employ the pilot.

Port Charges.—Foreign vessels enter and clear at Coronel. **Charges for Dispatch** are from 5 dols. to 25 dols., which include stamped paper for Custom House charges. The British Consular fees are: For deposit of articles, 2s. 6d.; muster rolls, 5s. each; and if filled in by Consular agent, 7s. 6d.; licences, 5s.; bill of health, when required, 10s.; each seaman discharged or shipped, 2s. **Sand Ballast** :—50 c. gold per ton on board. **Mooring** :—25 dols. **Labour** :—5 dols. per day, currency. **Provisions** :—Water, 1 dol. 50 c. per ton; beef, 30 c. to 35 c. per kilo.; bread, 5½ c. to 7 c. per lb.; fowls, 80 c. to 1 dol. each. Vegetables and salt provisions obtainable in moderate quantities. **Brokerage** :—30 dols. **Stamped Paper** :—5 dols.

MATANZAS.

Matanzas is in lat. 34°0' S., long. 71°50' W.

Exports.—Wheat and barley.

Accommodation.—The anchorage is in 6 to 10 fathoms, 4 cable lengths from the shore, and is exposed to the N. Lighters are loaded in fairly smooth water, but have to be hauled out through the surf, which is nearly always bad.

MEJILLONES.

Mejillones (or Mexillones del Sur) is in lat. 23°15' S., long. 70°25' W.

Accommodation.—Mejillones bay is spacious and deep. The anchorage is on the western side in 7 fathoms on a sandy bottom, about 2 miles inside the bluff; at a distance of 3 cables there is 30 fathoms of water. This is a rising port recently opened. Vessels with coal, wood, bricks, and rough goods generally, can enter the port direct from abroad. Railway connection with Antofagasta.

Port Charges.—Same as Antofagasta.

MEXILLONES.

This port is closed.

MOLLE.

Molle is in lat. 20°30' S., long. 70°10' W. This port is now abandoned.

PABELLON DE PICA.

Pabellon de Pica is in lat. 20°55' S., long. 70°8' W.

Export.—Guano.

Accommodation.—There is anchorage in the bay in 12 to 18 fathoms, bottom rock with sand and shells; but it is advisable not to anchor

Chile—Pabellon de Pica (*continued*).

in less than 14 fathoms, on account of the heavy rollers that occasionally set in to the bay. There is also anchorage in 14 fathoms $\frac{1}{2}$ a mile W.S.W. of the landing place, where several vessels may ride. The only landing place is on a smooth, sandy beach, sheltered by four small islets, and several rocks $\frac{1}{2}$ a mile north of the hill, 50 ft. high, where lighters may go in, be moored in safety, and load easily.

PAJONAL COVE.

Pajonal Cove is in lat. $27^{\circ}54'$ S., long. $71^{\circ}10'$ W. The anchorage, in 6 fathoms, is well sheltered from southerly winds.

PAPOSO.

Paposo is in lat. $25^{\circ}5'$ S., long. $70^{\circ}35'$ W.

Population.—About 150.

Exports.—Dried fish and copper ore.

Accommodation.—The outer anchorage is in 15 fathoms, and is quite open. It is subject to a heavy swell, except in the little bay at the landing place, where there is a depth of 19 ft. Shipmasters should moor with two anchors ahead and a kedge astern, as the water is deep and the holding ground bad. There is a sunken rock about halfway down the bay, over which the sea breaks when there is a heavy swell.

There is a small smelting establishment for copper.

Steamers very seldom call here.

PAQUICA.

Paquica is in lat. $21^{\circ}50'$ S., long. $70^{\circ}10'$ W. This port is no longer of any importance.

PEÑA BLANCA.

Peña Blanca, in lat. $28^{\circ}50'$ S., long. $71^{\circ}30'$ W., is a very small port.

Population.—About 150.

Export.—Ore.

Accommodation.—The best anchorage is in 10 fathoms, placing the port anchor to southward, starboard anchor to westward, and stern anchor to eastward. Fresh water is scarce and not good.

PENCO.

(See **Concepcion Bay**, p. 1249.)

PICHIDANQUE.

Pichidanque is in lat. $32^{\circ}5'$ S., long. $71^{\circ}30'$ W.

Accommodation.—Vessels anchor inside Locos Island, in 5 fathoms water, and are well sheltered. A few cargoes of copper ore are occasionally loaded here. The only danger in entering is a rock called Casualidad, the position of which, according to the chart, has not yet been accurately determined.

Sheep, cattle, and other supplies can be obtained at the village of Quilimari, about a mile from the anchorage ground, but water is difficult to obtain.

Chile.**PISAGUA.**

Pisagua, in lat. 19°35' S., long. 70°13' W., is the most northerly of the nitrate ports, and is the northern terminus of the Nitrate Railway Co., Ltd., which connects it with the neighbouring port of Iquique.

Population.—About 3,500.

Imports.—Coal, machinery, ironware, provisions, dry goods, sacks for nitrate, sulphur, etc.

Exports.—Nitrate of soda and iodine.

Accommodation.—Vessels anchor close in shore in 20 to 50 fathoms. Rise and fall of tides about 4½ ft. There is good anchorage, with plenty of room, and there are no rocks in the bay. Vessels are loaded and discharged by launches of 25 tons, the launches being loaded and discharged over moles, of which there are four for loading nitrate, and two for discharging coal and other inward cargo. Surf boats are also used.

Pilotage.—Not compulsory. 3 c. Chilian paper per reg. ton.

Towage:—35 c. per reg. ton in and out. Into berth alone, 20 c. per reg. ton. Out, 20 c. per reg. ton.

Port Charges.—There are no tonnage dues—see **Chile**. **Light-house Dues:**—See **Chile**. **Mooring or Unmooring:**—3 c. per reg. ton, including outward pilotage, if necessary. **Entrance and Clearance at Customs:** 15 dols. to 25 dols. **Boat Hire:**—Use of boat for mooring or unmooring, 20 dols. Use of launch for mooring, 20 dols.; unmooring, 25 dols. Use of launch for cargo, 40s. per 1,000 quintals. **Stevedore:**—7 dols. 50 c. per 1,000 quintals. **Labour:**—6 dols. per day for coal; other cargo, 6 c. per bag. **Hospital Dues:**—10 c. per reg. ton, payable once a year. **Ballast:**—3 dols. 50 c. per ton from shore. **Water:**—7 c. per Spanish gallon. (Brought from wells, at Dolores in the interior, by pipes.) **Beef:**—From 35 c. to 40 c. per lb.

Pro Forma Charges on a sailing vessel of 1,686 tons reg. :—

	Gold	
	Dols.	c.
Pilot	188	16
American bill of health	17	50
Water	186	20
Launch hire	1,579	54
Commission, £5.	69	57
Custom House dispatch	20	00
Beef	617	70
Cables and postage	19	70
British Consul	21	10
Stevedore	397	33
Provisions	150	50
Advance to seamen	127	05
Doctor's fee	70	00
Medicine	12	50
Shore labour	90	60
Cash to master	58	84
Hospital dues	168	60

3,789 89 = £284 3s. 6c

Pro Forma Charges on a vessel of 1,909 tons reg., discharging full cargo of coal, and loading 1,000 tons of nitrate :—

	Paper.	
	Dols.	c.
Labour, discharging coal	3,939	36
„ loading nitrate	673	50
Stevedores	235	13
False freight on launches (not discharged same day)	70	50

Carried forward . . . 4,918 49

Chile—Pisagua (*continued*).

	Paper	
	Dols.	c.
Brought forward	4,918	49
Sacks lost on board	169	50
Pilot inwards	149	58
„ outwards	189	58
Provisions, etc.	2,908	70
Water	348	84
Doctor and medicines	285	80
Hospital expenses	383	00
Hospital dues	305	35
Boat hire, cables, and petties	147	50
Commission, £5	127	15
Entrance fees	25	00

9,958 49 = £373 8s. 10d.

PORT MONTT.

Port Montt is in lat. $41^{\circ}25'$ S., long. $72^{\circ}58'$ W. It is the seaport to the German colony on Llanquihue Lake, about 15 miles distant.

Population.—3,000.

Export.—Timber.

Accommodation.—The anchorage at Port Montt is good, but open to the southward, and the rise and fall of the tide is 15 ft. The little harbour is $4\frac{1}{2}$ fathoms deep and has a fine sandy bottom. It is sheltered from all winds. The Pacific Steam Navigation Co.'s steamers always anchor in it, and beach their vessels for repairs, etc. Fresh provisions and water can be obtained.

PORT PAPUDO.

Port Papudo is in lat. $32^{\circ}35'$ S., long. $71^{\circ}30'$ W.

Exports.—Corn, wood, and copper.

Accommodation.—This is a safe anchorage during nine months of the year, but dangerous from May to August. There is a small pier, called Muelle Frances, in the S.W. part of the bay, which facilitates the loading of cargo.

Fresh water, fish, wood, and small quantities of fresh provisions can be obtained.

PUERTO OLIVA.

Puerto Oliva is in lat. $25^{\circ}20'$ S., long. $70^{\circ}35'$ W. This port does not now exist.

PUNTA ARENAS.

Punta Arenas (or Sandy Point), a Chilian settlement in the Straits of Magellan, is in lat. $53^{\circ}10'$ S., long. $71^{\circ}0'$ W.

Population.—About 10,000.

Imports.—Clothing, iron, cement, general merchandise, and gold.

Exports.—Wool, hides, and preserved and frozen meat.

Accommodation.—The anchorage is good and well sheltered, in 10 to 15 fathoms $\frac{3}{4}$ mile from shore. Rise and fall of spring tides is about 10 ft. There is a mole here 480 ft. in length, with four steam cranes, to lift up to 10 tons. There is a slip for hauling up vessels up to 1,000 tons, and two smaller slips. Vessels can coal alongside at the rate of 150 to 180 tons per day. Ordinary repairs can be undertaken, and divers can be had.

Chile—Punta Arenas (*continued*).

Ships' stores of all descriptions, live stock, fresh meat, and vegetables can be obtained, also wood and fresh water.

Cardiff coal can be obtained at 50s. per ton. Ballast, 4s. per ton.

PUNTA BLANCA.

Punta Blanca, in lat. $22^{\circ}17'$ S., long. $70^{\circ}10'$ W., is about 20 miles N. of Huanillo.

Accommodation.—The anchorage is in 13 fathoms. In the cove on the north side of the Punta, vessels occasionally load with copper ore.

QUINTERO.

Quintero is about 3 miles S. of Horcon Bay, and 18 miles N. of Valparaiso.

Accommodation.—This is a fine bay, and good anchorage is to be had in moderately deep water. It is sheltered in N. winds, and also under Wentanilla Point. At present the port is not used, but in the near future it is likely to relieve Valparaiso.

Fresh water can be obtained when the season is not very dry.

SAN ANTONIO.

San Antonio is in lat. $33^{\circ}40'$ S., long. $71^{\circ}42'$ W., and is situated 40 miles S. of Valparaiso.

Exports.—Wool and barley.

Accommodation.—There are two ports called San Antonio, the new and old. The new port, to the north of the point, is the best, being sheltered from southerly winds. From April to August or September it is not a safe place to load at, being then exposed to the northerly winds prevalent at that season. The old port is then preferable. The facilities for loading at the new port are good, and there are no charges; whilst at the old the captain of the port expects a gratuity of 5 dols., which, however, is optional. At the new port the bottom is rocky, and the loss of an anchor is a common occurrence. Vessels should not go inside of 14 or 15 fathoms, as the bottom is not so foul at that depth. Without a commanding breeze, sailing vessels find a difficulty in getting out, as there is a strong current running in from the north.

Fresh provisions same price as at Valparaiso, from which port a steamer calls once a week.

SAN CARLOS DE ANCUD.

San Carlos de Ancud, in lat. $41^{\circ}52'$ S., long. $73^{\circ}50'$ W., is situated at the northern extremity of the island of Chiloe.

Population.—About 6,000.

Exports.—Timber, hams, brooms, etc.

Accommodation.—The anchorage off the town is not safe, but a vessel of 12 ft. draught can remain in fine weather in 3 fathoms, 4 cables N.W. from the pier; for larger vessels the best anchorage is in 7 or 8 fathoms sand and mud, off Balcaicura Point. Small repairs can be effected.

Provisions are cheap and plentiful. Climate healthy. Coal cannot be obtained here.

Chile—San Carlos de Ancud (*continued*).

CASTRO, on the E. side, has good anchorage in 18 fathoms water, about 5 miles from the town. Vessels of 12 ft. draught can reach as far as the town at low water. Tides rise 18 ft. The approaches are intricate, and should not be attempted without the aid of a pilot.

SARCO.

Sarco is in lat. 28°58' S., long. 71°35' W.

Accommodation.—The bay is considered safe. Ships usually anchor in 12 fathoms water, rocky bottom, with two anchors ahead and a stream anchor astern. Vessels bound here must first call at Valparaiso, where the dues are paid and licence obtained. Water and provisions can very seldom be had. The trade here is very small and confined to coasters. Copper ore from mines in the vicinity is the only inducement for vessels to call.

TALCAHUANO.

(See **Concepcion Bay**, p. 1249.)

TALTAL.

Taltal, the capital of the department of the same name, is in lat. 25°30' S., long. 70°40' W.

Population.—9,000.

Imports.—Coal, machinery, sundry goods, etc.

Exports.—Nitrate of soda, iodine, gold, copper, silver, etc.

Accommodation.—The anchorage is in 5 to 17 fathoms, bottom hard sand. Vessels can anchor with perfect safety at a very short distance (250 to 300 ft.) from the shore and the railway pier, and every facility is afforded for the discharge of cargo and the loading of nitrate of soda into lighters. The depth of water where ships anchor is from 10½ to 13 fathoms. Steamers anchor nearer the shore in 8 to 10 fathoms.

The Taltal Railway Co. have two discharging and loading moles, each 300 ft. in length, and two loading moles only, 280 ft. in length. There are also three town moles for discharging general cargo.

At full and new moon a heavy surf generally sets in from December to March, and also at other times of the year; but no vessel requires to put out more than one anchor and light stern moorings.

The harbour can be entered by night or day, wind permitting; a land breeze, however, frequently sets off shore at sundown.

The Taltal Railway runs about 130 miles into the interior, taking up coal and bringing down nitrate and ores, nearly all of which is shipped or discharged at the New Railway Iron Pile Mole, situated about the middle of the bay. There are two steam cranes to lift up to 3 tons, and one hand crane to lift up to 15 tons.

Pilotage.—Varies according to size of vessel, viz., vessels up to 1,000 tons reg., inwards and outwards, together, 60 dols., Chilian currency; vessels from 1,001 to 1,500 tons reg., in and out, 80 dols.; vessels from 1,501 to 2,000 tons reg. and upwards, in and out, 100 dols.

Port Charges.—**Hospital Dues** :—10 c. gold per reg. ton. **Ballast** :—2 dols. per ton, delivered alongside. **Commission** :—For dispatch of vessel, 50 dols. to 75 dols. according to size of vessel. **Water** :—Condensed, delivered alongside vessel, 12 dols. 50 c. per ton. **Labour** :—From 6 dols. to 8 dols. per day. **Provisions** :—Fresh beef, 80 c. per lb.

Chile—Taltal (*continued*).

Brokerage :—Commission on coast cargo procured, 5 per cent. ; on home charter, $2\frac{1}{2}$ per cent. ; inward consignment with coast cargo, 50 dols., and $2\frac{1}{2}$ per cent. on freight collected here.

Mooring and Unmooring, together, 6 c. per reg. ton. Launch and boat additional. Launch and boat, with four men, for mooring and unmooring any vessel, 22 dols.

Pro Forma Charges on a vessel of 1,000 tons reg. :—

	Paper	
	Dols.	c.
Pilotage inwards	30	00
Mooring by pilot	40	00
Launch, use of, to drop and recover stern moorings	40	00
Hospital dues, 10 c. gold per ton	180	00
Beef, 400 lb. at 80 c.	320	00
Lighthouse dues, 40 c. gold per ton	720	00
Vegetables and potatoes	150	00
Water, 200 arrobas at 25 c.	50	00
Ballast discharged, 300 tons at 1 dol.	300	00
Launch hire, 1,500 tons nitrate = 33,000 quintals at £3 per 1,000	2,376	00
Stevedore for stowing, 10 dols. mil.	330	00
Bill of health	15	00
Crew list	10	00
Certificate of protest	1	00
Stamped paper used at Custom House	5	00
Commission for dispatch of vessel	50	00

4,617 00 = £173 2s. 9d

Pro Forma Charges on a British ship, loading 3,500 tons of nitrate —

	Paper	
	Dols.	c.
Cash to captain	2,785	00
Agency commission per charter-party, £5 at $8\frac{5}{16}d.$	144	36
Ligherage of nitrate	4,659	73
Cable re sailing	40	00
Petty expenses	5	00
Consular papers	57	75
Custom House paper and Chilian bill of health	15	00
Pilots account, mooring and unmooring	274	50
Hire of mooring launch	40	00
Towage in	164	70
Towage out	372	55
Water	318	75
Hospital dues—gold, 205 at 105 per cent. premium	420	25
“ “ currency	5	11
Stevedore	601	21
Cable	29	44
Stove pipe, etc.	20	00
Beef, etc.	204	70
Bread, etc.	72	00
Biscuits and tea	103	78
Discharging ballast	16	00
Raising anchor	45	00
Dentist's account	20	00
Stores	108	60
Blacksmith's account	27	50
Potatoes	40	80
Medicines	79	90
Stores	1,019	20
Doctor's attendance	105	00
Butcher's account	2,544	50
Account for stores	147	60
Account engaging men	144	36
Account engaging men	56	00
3 advance notes at £4 10s. = £13 10s.	389	76
Heaving anchor on board, 4 men assisting	32	00

15,110 05 = £539 12s. 5d

*Chile.***TOCOPILLA.**

Tocopilla, in lat. 22°7' S., long. 70°10' W., is situated in Algodon Bay.

Population.—6,500.

Imports.—Coal and lumber.

Exports.—Nitrate of soda and copper ores.

Accommodation.—The bay is very safe; there is no bar, but shipmasters should be careful of a reef which runs out about $\frac{1}{4}$ of a mile from the shore, about due north, and is a very short distance from the long mole belonging to the Railway Company, and N.E. from it. A heavy surf sets into the harbour at times, when no cargo can be landed or shipped; these days are not counted as lay-days.

There is a plentiful supply of launches, varying from 15 to 45 tons.

There are two moles in the bay from which copper ores are shipped—Tocopilla Establishment and Buena-Vista Establishment; two moles from which nitrate of soda is shipped—Buena-Vista and the Railway—both moles being large iron structures. Vessels can anchor near the piers in from 12 to 20 fathoms at all times. Vessels load and discharge from 100 to 200 tons per day, and load from 100 to 600 tons per day; steamers discharge from 200 to 400 tons per day. Loading copper ore is done at the rate of 100 to 200 tons per day; loading nitrate is at 300 to 1,200 tons per day.

Vessels are generally moored with two bow anchors heading S.W., and with one anchor at the stern; this should be of good quality, though not necessarily very heavy. Occasionally a strong wind blows down the valley from the E., called a "Calameña"; it comes suddenly and generally early in the morning, continuing for about half an hour. Vessels with imperfect stern moorings have sometimes parted them.

Vessels arriving with stone or rough ballast must anchor in 30 to 50 fathoms of water, but with sand ballast they can anchor in 20 fathoms, and in such depths throw the ballast overboard; but permission must be previously obtained from the port authorities, otherwise a fine will be inflicted.

There are two steam cranes to lift 20 to 30 tons per hour each; three hydraulic cranes to lift from 2 to 3 tons each; one hand crane to lift 25 tons. Steamer communication with Valparaiso and Panama weekly. Telegraphic communication throughout Chile by Government lines. Cable communication with all parts of the world, via Antofagasta and Iquique.

Condensed water is obtainable of very good quality, at fair rates, from the Buena-Vista Establishment. Fresh beef is also obtainable.

Pilotage.—Not compulsory. There is an authorized pilot, who generally goes off to offer his services. Vessels can moor very securely in 12 to 14 fathoms of water. Rates, according to size of vessel, about 25 dols. for a vessel of 1,000 to 2,000 tons reg.

Port Charges.—Hospital Dues:—10 c. per reg. ton payable yearly.

Light and Buoy Dues:—Steamers, 60 c. per reg. ton; Sailers, 40 c. per reg. ton (payable yearly). Stamp for manifest, 1 dol.; permission to throw

out or load ballast, 20 c.; certificate of tonnage, 1 dol. **Captain of Port's**

Fee:—2 dols. **Customs Fee:**—For agent's guarantee, 1 dol. **Sailing**

Licence:—20 c. **Stevedore:**—For nitrate cargoes, Sailers, 7 dols. per 1,000

quintals; Steamers, 12 dols. **Mooring and Unmooring:**—3 c. per reg. ton

each operation. **Ballast:**—5 to 6 dols. per ton, placed alongside. **Loading:**—

Nitrate, from the mole into the launch, and sending alongside vessel, £3 per 1,000 quintals. **Agent's Commission:**—For transacting Custom House business, etc., 50 dols.

Chile.**TOMÉ.**(See **Concepcion Bay**, p. 1249.)**VALDIVIA.**

Valdivia, in lat. $39^{\circ}47'$ S., long. $73^{\circ}22'$ W., is situated on the left bank of the River Calle-Calle, about 10 miles from Corral, on the coast.

Population.—About 25,000.

Exports.—Hides, wheat, wool, oats, beeswax, honey, potatoes, beer, tannin, whale bones, whale oil, etc.

Accommodation.—The river is navigable for small craft only. The best anchorage at Corral is in 4 to 7 fathoms. Discharging is done by means of covered lighters, of 50 to 120 tons capacity. In the middle of the port of Corral is a shallow place which is gradually increasing. There are large machine shops capable of doing extensive repairs, and a small dry dock to take vessels up to 75 tons. Ships to 250 tons are built at Valdivia. Ballast can be obtained, but not coal. Provisions are dear.

Pilotage.—Not available.

For **Port Charges**, see **Chile**. Towage to Corral, £5 to £10; out to sea, £15.

VALPARAISO.

Valparaiso is in lat. $33^{\circ}15'$ S., long. $71^{\circ}40'$ W.

Population.—180,600.

Imports.—Manufactures of all kinds, coal, etc.

Exports.—Nitrate of soda, copper, ores, wheat, barley, wool, etc.

Accommodation.—Valparaiso Bay is commodious and well sheltered, except towards the north, and in the winter months when northerly winds prevail vessels are rather exposed, although with good moorings there is no danger to be apprehended. Large vessels anchor in 15 to 30 fathoms, on good holding, muddy ground.

Sailing vessels entering Valparaiso Bay should not approach Angeles Point to a less distance than 4 cables, nor come into less than 25 fathoms, until the lighthouse bears S.E. by S. Curaumilla Point, well open of the land west of Magazine Bay, leads north-westward of Buei Rock.

From May to August vessels must moor with two anchors forward, each cable to be 120 fathoms in length in water, and one anchor astern with 90 to 105 fathoms of cable. From September to May, on account of the strong south winds, 90 fathoms forward and 105 fathoms astern. Large ships must have two stern moorings.

There is one buoy for the use of vessels calling for orders, which belong to the Government and for which no charge is made; there is another buoy for the use of vessels having explosives on board.

There are two floating docks:—

Dock.	Length over all in feet.	Width of Entrance in feet.	Depth on the Sill in feet.	Lifting Power in tons.
Floating Dock (Valparaiso)	265	80	15	2,200
Floating Dock (Santiago)	300	49 $\frac{3}{4}$	17	2,400

There are five firms who undertake repairs, and extensive work can be carried out.

Chile—Valparaiso (continued).

The Custom House Mole is 800 ft. long and 50 ft. wide. The depth of water at high tide outside is 36 ft. ; inside, 33 ft. ; at low water, 3 ft. less. This mole can accommodate two steamers on the E. side., and on rare occasions—only in summer—a small vessel is moored on the inside. Cargo is handled by movable hydraulic cranes lifting $1\frac{1}{2}$ tons. The 45-ton crane destroyed by the earthquake (August 16, 1906) is being replaced by one capable of dealing with weight up to 80 tons. Meantime nothing heavier than 20 tons can be dealt with by the cranes on the sea-wall. Telegraphic communication by submarine cables along the entire coast.

Time Signals.—The time signal by ball has been suspended since the buildings were destroyed by an earthquake in 1906. A gun is fired from Fort Covadonga at noon, but is unreliable.

Pilotage.—Not compulsory, but a pilot is generally engaged for mooring and unmooring. The charges are as follows : For vessels of 100 to 200 tons, 7 dols. ; 201 to 300 tons, 9 dols. ; 301 to 400 tons, 11 dols. ; vessels over 400 tons, 3 c. per ton reg., and an additional 18 dols. is charged for boat hire. **Towage** :—Outwards, £1 per 100 tons reg. ; inwards, from £2 to £5 according to size of the vessel.

Port Charges.—Mooring and Unmooring :—4d. per reg. ton. Charge for hire of anchor and chains as follows : Vessels of 600 to 800 tons, 3s. 9d. per day ; 801 to 1,000 tons, 4s. 6d. per day ; 1,001 to 1,200 tons, 5s. 3d. per day ; 1,201 to 1,500 tons, 6s. 8d. per day ; 1,501 to 1,600 tons, 9s. per day ; 1,601 to 1,700 tons, 10s. 6d. per day ; 1,701 to 1,800 tons, 12s. per day ; 1,801 to 1,900 tons, 13s. 6d. per day ; and 1s. for every additional 100 tons. Minimum charge, 3s. per day. **Ballast** :—From 3 dols. to 4 dols. 50 c. per ton alongside the vessel. **Light Dues** :—60 c. gold per reg. ton for steamers ; 40 c. for sailing vessels (payable every twelve months). **Hospital Dues** :—10 c. gold per reg. ton (payable once a year). **Wharfage Dues** :—60 dols. per working day for the first three days, 120 dols. for the fourth day, 240 dols. for the fifth day, and so on. Sailing vessels are charged the lower rate for the first six days. Cargo is discharged from vessels alongside the mole by Government contractors, and stored in Custom Houses ; the dues, which are regulated by tariff, are collected by Government at the time of clearing goods from the Custom House. Supplies of all kinds are plentiful, and generally moderate in price. **Water** :—3s. per ton. **Entrance and Clearance Fees** :—About 20 dols. **Labour** :—6 dols. per day. Discharging coal, about 90 c. per ton. **Buoy Hire** :—Berths at mooring buoys can be hired at 20 dols. (gold) per day.

Pro Forma Charges on a steamer of 2,399 tons reg., with a cargo of rails in and ballast out :—

	Dol.	c.	£	s.	d.
Light dues, 60 c. gold per reg. ton	1,439	40	—	—	—
Brokerage	133	33	—	—	—
			118	0	0
Pilotage inwards	88	97	—	—	—
" outwards	88	97	—	—	—
Boat hire	50	00	—	—	—
Labour, discharging 1,663 tons	1,332	00	—	—	—
Port doctor	80	00	—	—	—
Consular fees	44	75	—	—	—
Entrance and clearance	20	00	—	—	—
Buoy hire (say 17 days)	345	00	—	—	—
			89	13	6
			£207	13	6

Chile—Valparaiso (*continued*).

Pro Forma Charges on a steamer of 2,338 tons net reg., discharging 4,810 tons of coal:—

	Gold. Dols.	Currency. Dols. c.
Pilotage inwards at 3 c. per 100 kilos.	—	70 14
Mooring, at 3 c. per 100 kilos.	—	70 14
Pilot boat	—	36 00
Pilotage outwards	—	70 14
Hospital dues	230	3 80
Premium on gold for amount in currency, 35 dols. 31 c.	—	1 35
Light and buoy dues	1,400	2 80
Premium on amount converted to currency 35 dols. 31 c.	—	98 00
Water, 168 tons at 2 dols. gold per ton	336	—
Stevedore, discharging at 80 c.	—	3,848 00
Use of 6 tubs and 2 shutes, 25 days	—	600 00
Conveyance to and from steamer	—	20 00
Hire of buoys, 25 days	500	—
Doctor's fee for inspection, practically compulsory	—	89 52
	2,466	4,812 87 =
		£436 18s. 1d.

Note.—This vessel discharged in January, 1909, at which date currency exchange had advanced to 12½d. per dollar, making the account much greater than it would otherwise have been. During 1908 the exchange averaged 9⅞ pence.

COLOMBIA.

The Republic of Colombia is, since 1908, made up of 27 departments and two territories, having an area of about 435,100 square miles and a population estimated at a little over four millions. Under the political division abolished in 1908 the executive power rested in the hands of the President, the legislative authority being exercised by a Congress of two Houses (the Senate and the House of Representatives).

Commerce.—There are few forms of industry in the Republic besides agriculture, and the Customs charges, which are very high, are imposed for revenue-raising purposes only. The imports, which consist mainly of cotton goods, yarn, etc., from the United Kingdom; sugar, rice and potatoes from Germany; and flour, lard, oil, etc., from the United States, average about £2,500,000 per annum, on which Customs duties to the amount of about £1,250,000 are levied. The Exports are valued at nearly £3,000,000.

Mercantile Marine.—Small, consisting of one steamer and five sailing ships, total tonnage, 1,842.

Internal Communications.—The Magdalena river is navigable for 900 miles; there are a number of railways of various gauges; and roads are being greatly improved.

Currency, Weights and Measures.—The monetary unit is the gold dollar, value 4s. 1½d.; 4 dols. 85 c. = £1 sterling. The gold coins in circulation consist of 1, 2½, and 5 dollar pieces; there are also silver dollars, half dollars, pesetas, and reals, beside a number of nickel coins and a quantity of paper money. By a special law passed in 1905 the exchange between paper and gold currency has been fixed at 10,000 per cent., or in other words 1 dollar paper = 1 c. gold. In December, 1908, the sovereign (British) was equal to 500 dols. paper currency. The metric system of weights and measures was introduced in 1857, but in Custom House business the kilogramme = 2.204 lb. is used.

Colombia.

Customs Regulations.—All cargo for Colombia must be accompanied by a consular invoice, containing the mark, number, weight, and contents of each package; and besides, the value of the whole, and the total weight in kilogrammes (gross weight) of every series of packages. The ships must also bring a sobordo for each port, certified by the Colombian Consul with the following data—marks, numbers, number of packages, names of shippers, gross total weight of every series of packages, and names of consignees. In the ports where there is no Colombian Consul, any consul of a friendly nation to Colombia may certify the invoices and sobordos. The Customs duties are imposed by gross weight in kilogrammes, divided into sixteen classes, from $2\frac{1}{2}$ c. to 1 dol. 50 c. per kilogramme.

Heavy fines are imposed for the want of sobordo to ships, or for packages short landed, or packages over.

Coasting Trade.—This is reserved to Colombian vessels only.

Tonnage Tax.—All vessels pay 1 dol. 50 c. gold on every 1,000 kilogrammes of merchandise which is unloaded at any Colombian port. This tax is not payable by vessels in ballast, or those unloading coal, bricks ice, or salt only, all of which are admitted free.

Light Dues.—Vessels entering Colombian ports where there is a light pay 5 c. per ton for the first 100 tons register, and $2\frac{1}{2}$ c. for every additional ton. All Government charges are payable in gold only.

BARRANQUILLA.

Barranquilla, in lat. $10^{\circ}56'$ N., long. $74^{\circ}58'$ W., is situated on the River Magdalena, at the junction of the two arms, about 7 miles from its mouth.

Population.—45,000.

Imports.—General merchandise.

Exports.—Bark, hides, coffee, tobacco, etc.

Accommodation.—The depth of water on the bar varies considerably, but it is usually considered unsafe for vessels drawing more than 14 ft. to cross. The bar is subject to marked changes in depth at short intervals of time, and captains should exercise caution in entering and leaving the river. Little or no traffic takes place over the bar. At present all direct ocean traffic has been abandoned. A survey has recently been made, and the Colombian Government has been petitioned to assist in canalizing the bar. Average tonnage of vessels using port, 3,200 net. Vessels moor alongside pier at Puerto Colombia, and sling cargo into railway wagons. Four ships can berth at one time, and there is about 25 ft. depth alongside at all times. The port (Puerto Colombia) is 17 miles from Barranquilla, and there are two trains daily each way, excepting Sundays. Vessels must not come alongside until signalled, and berth will be indicated by flag on the pier.

Pilotage.—Not compulsory.—For a steamer of 834 net tons—pilot crossing bar, 25 dols.; pilot to Cartagena, 40 dols. From outside Savanilla Bay, 10 dollars gold; inside, 5 dollars gold.

Port Charges.—**Towage:**—Vessels of 200 tons from Barranquilla to outside bar, 50 dols.; Barranquilla to Savanilla, 90 dols.; over 200 tons, Barranquilla to outside bar, 60 dols.; Barranquilla to Savanilla, 100 dols.;

Colombia—Barranquilla (*continued*).

or the reverse way, same price. **Wharfage** :—£7 for first twenty-four hours, and twelve shillings for every additional hour. **Lighthouse Dues** :—On a steamer of 834 net tons, 20 dols. **Bill of Health** :—2 dols. 50 c. **Ballast** :—50 c. per ton. Duty to the nation.

Pro Forma Charges on a steamer of 4,065 tons net, 6,304 tons gross :—

	Gold. Dols. c.	Gold. Dols. c.
Lighthouse duty, Nisperal Light,—First 100 tons	5 00	
3,965 tons at three cents gold	118 95	123 95
Lighthouse duty, Boca Ceniza Light—First 100 tons	5 00	
3,965 tons at 2½ cents. gold	99 15	104 15
Tonnage dues on Import Cargo—\$1.50 gold the 1,000 kilos		10 00
Health Officer's fee		238 10
		= £49 1s. 10d.
To discharge ship which brought 600 tons (360,974 kilos <i>actual weight</i>), Stamps on Manifests, Bills of Lading, Lists	20 60	
Labourers on pier, extra charges for night work, etc.	120 23	
Checking and rechecking	7 00	
Petty expenses, including telegrams, fares, etc.	23 20	171 03
		= £35 1s. 3d.

BUENAVENTURA.

Buenaventura, in lat. 3°57' N., long. 77°1' W., is situated on the left bank of the river Dagua, about 2½ miles from the mouth.

Population.—3,091.

Imports.—General merchandise.

Exports.—Gold dust, sugar, hides, tobacco, coffee, indiarubber, cocoa, nuts, and platinum.

Accommodation.—The river is broad and deep, and vessels of 24 ft. draught can reach the town. The port will shortly be brought into connection with the interior by rail, a line being now (1908) in course of construction, of which some 60 kilometres are open for traffic.

Pilotage.—A pilot can be obtained at Bason Point at the N. point of entrance to the river. Rates, 25 dols., gold.

Port Charges.—**Sanitary Dues** :—10 dols., gold.

CARTAGENA.

Cartagena, in lat. 10°20' N., long. 75°31' W., is one of the finest and most commodious ports on the north coast of the Republic of Colombia.

Population.—14,000.

Imports.—Cotton goods and yarn, oil, flour, sugar, lard, potatoes, rice, etc.

Exports.—Coffee, tobacco, cocoa, balsam, indiarubber, ivory, nuts, fustic, mahogany, cedar, hides, cocoanuts, dividivi, etc.

Accommodation.—The harbour is perfectly land-locked and easy of approach. Vessels of large draught anchor in 9 fathoms off Pastelillo Fort. Small craft, drawing 6 ft., lie alongside the walls of the city.

Colombia—Cartagena (continued).

The bottom is soft mud. There is a very deep channel from the entrance to the anchorage and wharf, well marked by nine nun buoys painted red on the starboard side, and nine can buoys painted black on the port side. Pilots will be found off the Boca Chica. A wharf, 451 ft. long, has been built outside the Pastelillo bar in the bay, alongside which the largest steamers can lie, as there is 30 ft. to 40 ft. of water alongside. Here is also a large warehouse, of a capacity of 1,500 tons, for import and export cargo, where the Custom House receive and dispatch goods. The wharf is fitted with railway lines in connection with the Cartagena Magdalena Railway, which affords means of transit, via Calamar and the River Magdalena, with Bogota and the interior of Colombia. There is one crane on the wharf to lift $1\frac{1}{2}$ tons. The Custom House quay, where there is another large warehouse, is 821 ft. long, but has only 5 ft. at high and $3\frac{1}{2}$ ft. at low tide alongside. There are three other quays for vessels of small draught. The Cartagena Terminal and Improvement Co. have tugs and lighters always ready in case of emergency. There is a patent slip to take vessels of 150 to 200 tons, and a steam machine shop where small repairs can be executed. Supplies are plentiful and cheap.

Pilotage.—For steamers, from outside, 10 dols.; from Boca Chica 5 dols.; going out, 5 dols. Sailing ships pay less in proportion to size.

Port Charges.—Tonnage Dues:—1 dol. 50 c. for every 1,000 kilogrammes of cargo delivered. Sanitary visit, 10 dols. gold. **Clearance:**—1 dol. 50 c. for any size vessel. **Light Dues:**—5 c. per ton for each of the first 100 tons reg., and $2\frac{1}{2}$ c. for every additional ton. Ships coming from the northern coast pay double these rates. **Ballast:**—Can be obtained at Boca Chica from the Government at 50 c. per ton of 1,000 kilogrammes, and from the Railway Company at the wharf at 10 dols. gold, per car load of 10 tons. **Wharfage:**—The minimum charge for mooring alongside the railway wharf is 10 dols. per diem, or part thereof; 6d. or 12 c. U.S. gold for each ton of cargo discharged or loaded. **Water:**—Cheap; it can be obtained from the Cartagena Water Works Co., at 50 c. gold, per ton of 35 cub. ft., piped up to the ship's tanks with 70 lb. pressure. All port charges are payable in gold.

CISPATA.

Cispata is in lat. $9^{\circ}22'$ N., long. $75^{\circ}55'$ W.

Accommodation.—Cispata bay is about a mile wide, with an average depth of $4\frac{1}{2}$ fathoms. It is well sheltered and is considered a safe harbour. There is a village, Sanantero, 3 miles from the bay. Ships destined for Cispata have to call first at Cartagena, in order to clear at the Custom House. Provisions can be obtained. Fish and game are plentiful. Vessels need not return to Cartagena to clear; the bills of lading may be signed on board and sent there, and the ships sail directly. Vessels not having large hatchways should be provided with a good winch and chains to take in the heavy wood. Old chains are of good service in keeping the wood together, which arrives in rafts alongside, and sometimes pitches about when there is a strong breeze. Much cordage is spared in this manner.

Pilotage.—Pilots can be obtained; they must be kept on board until they get a chance of returning in a canoe. Charge, 16 to 20 dols. (£3 to £4).

Colombia—Cispata (*continued*).

Port Charges.—No charges are levied in Cispata. Custom House officers go with the ship to dispatch her, and charge 1 dol. 30 c. per day and food, and expenses back to Cartagena.

COVENAS.

Covenas is in lat. $9^{\circ}25' N.$, long. $75^{\circ}41' W.$, on the S. side of the Gulf of Morrosquillo, about 5 miles E. of Cispata.

Accommodation.—Vessels anchor in 4 fathoms about 4 cables from the shore. Clearance is to be obtained at the Cartagena Custom House. Cattle, which are the only export, are brought off in lighters.

CUPICA.

Cupica Bay is in lat. $6^{\circ}35' N.$, long. $77^{\circ}27' W.$ The River Naipipi is within two hours' walk of Cupica village.

Accommodation.—The bay is about 5 miles wide, and is considered one of the best anchorages on the coast. There is sufficient water for the largest vessels afloat, and it is exposed only to southerly winds. Vegetables and fresh provisions can be obtained.

PUERTO COLOMBIA.

Puerto Colombia, formerly called Savanilla, is in lat. $11^{\circ}6' N.$, long. $75^{\circ}59' W.$, 17 miles from Barranquilla, of which it is the port.

Population.—About 45,000.

Imports.—Manchester goods, rice, lard, wire netting, wines, tinned foods, etc.

Exports.—Coffee, hides, tobacco, bark, indigo, rubber, cotton, cotton seed, dividivi, ivory, nuts, and fustic and other dye-wood.

Accommodation.—The water area of the port is 6 square miles. There is no bar. The depth of water at the entrance at high water ordinary springs is 25 ft., and at low water ordinary springs 23 ft. The wharf is $\frac{3}{4}$ of a mile in length, with a depth alongside of 26 to 27 ft., and vessels can approach it without the assistance of a pilot and can leave it at any hour of the night. Four large vessels can be berthed alongside at one time, and the Barranquilla Railway and Pier Co., who own the wharf, give excellent facilities for loading and unloading vessels. There is a depth of water at quayside at high water ordinary springs of 25 ft., and at low water ordinary springs of 23 ft. Ballast cranes alongside the pier for discharging from 400 to 500 tons per 24 hours each. Railway connection with Barranquilla.

Pilotage.—Not compulsory, and seldom taken advantage of.

Port Charges.—Wharfage and Quay Dues:—£7 for the first 24 hours, and 12s. per hour afterwards; Sundays and feast days not charged when vessel is not working. **Light Dues:**—5 dols. for the first 100 tons, and 3 c. for every additional ton. **Tonnage Dues:**—1 dol. 50 c. per ton of cargo imported. **Clearance Fees:**—About 4s. for Customs stamps. **Consular Fees:**—Bill of Health, about 10s. **Labour:**—60 c. per day.

RIO HACHA.

Rio Hacha, in lat. $11^{\circ}31' N.$, long. $72^{\circ}52' W.$, is situated at the mouth of the River Hacha, about 39 miles E.N.E. of Santa Marta.

Population.—4,000.

Colombia.—Rio Hacha (*continued*).

Exports.—Dividivi, hides, coffee, etc.

Accommodation.—The best anchorage is in $2\frac{1}{2}$ to 5 fathoms, with the church bearing S.S.E., or nearer inshore, bearing in mind that the three-fathom line is 2 miles from the shore. It is sometimes difficult to get cargo off.

Pro Forma Charges on a vessel of 149 tons reg., drawing 10 ft. 4 in., and loading, in $2\frac{1}{2}$ fathoms, a cargo of 70 tons dividivi, and 50 tons Brazil wood :—

	Gold.	
	Dols.	c.
Light dues	17	25
Board of Health dues	10	00
Stores and crew lists	00	40
Permit to load	00	20
Permit to take water	00	50
Labour on board	30	00
Clearance	00	80
	59	15 = £12 4s. 0d.

SANTA MARTA.

Santa Marta is in lat. $11^{\circ}11'$ N., long. $74^{\circ}14'$ W.

Population.—18,000.

Exports.—Fruit (chiefly bananas), hides, coffee, cocoa, dividivi, dye-woods, gold, silver, pyrites, goat, alligator and bird skins, orchils, sarsaparilla, etc.

Accommodation.—This bay is very easy of access in all weathers, day or night, and is well protected naturally from prevailing winds, possessing a natural inner harbour of about 300 acres of water, with a varying depth of from 24 to 80 ft. Ships may anchor with perfect safety anywhere in the harbour, and also in the open bay. Ships may obtain good mooring at the railway jetties, and will generally find it most convenient to lie bow outward. The depth of water alongside the jetties is 28 to 30 ft. There is a weekly mail service direct to New York, and European connection via Pinaravilla, also cable communication. Ships cast anchor on entering the harbour, and proceed alongside the jetties after the visit of the Customs officials. Besides the usual ship's papers, a list of ship's stores, and of the crew and passengers, must be deposited in the Custom House. This is a healthy port; no quarantine regulations.

Pilotage.—Not required.

Port Charges.—Tonnage Dues :—Levied at the rate of 1 dol. 50 c. U.S. gold, for every 1,000 kilogrammes, gross weight, of cargo discharged, excepting coal, salt, ice, bricks, tiles, and cargo for the Santa Marta Railway Co.

Lighthouse Dues :—Charged at the rate of 5 c. per ton, U.S. gold, for the first 100 tons reg., and $2\frac{1}{2}$ c. per ton exceeding 100. **Ballast Dues :**—Charged at the rate of 50 c., U.S. gold, for each ton of ballast taken on board. **Wharf Dues :**—To vessels using the railway wharves a mooring charge of 3 dols. gold per steamer is made. Besides the above, the other charges for a vessel entering and clearing amount to about £1 sterling only.

Pro Forma Charges on a steamer of 2,728 tons reg., from England to Santa Marta, with a cargo in and out :—

Colombia.—Santa Marta (*continued*).

	Gold.	Dols.	c.
Tonnage dues, 233,962 kilogrammes of cargo		350	98
Light dues, 100 tons at 5 c., 5 dols.; 2,628 tons at 2½ c., 65 dols. 70 c.		70	70
Customs account:—		Dols.	c.
Permit to discharge, day and night		00	20
Import manifest		00	60
4 bills of lading (import)		00	80
Store, passenger, and crew lists		00	60
Export manifest		00	60
Customs officers for overtime		1	00
Customs clerk		2	50
Clearance		00	80
Board of Health dues		10	00
		17	10
		438	70
	£	s.	d.
Equivalent of above in sterling at 4 dol. 85 c. = £1		90	9
Wharf dues, 3 dols. gold		0	12
Visé bill of health		0	10
British Vice-Consulate, endorsement of articles		0	2
	£91	14	

SAVANILLA.(See **Puerto Colombia**, p. 1272.)**TUMACO.**

Port Tumaco, in lat. 1°53' N., long. 78°48' W., is on a small island, situated 30 miles N. from the boundary line between the Republics of Colombia and Ecuador, belonging to the former.

Population.—1,242.

Imports.—All kinds of European and North American manufactures, salt, sugar, rice, live cattle, etc.

Exports.—Ivory nuts, indiarubber, gold dust, cocoa, hides, coffee, lumber, and bamboos.

Accommodation.—There is a good anchorage in the road outside about 3 miles from the town, in 4 to 6 fathoms of water, but for all purposes of loading and unloading vessels have to come inside and anchor in front of the town, in 6 fathoms. The entrance is without danger for vessels drawing up to 18 ft., and the inside basin is sheltered from all winds. The depth on the bar at low water (spring tides) is 3 fathoms. The harbour has sandy bottom with no rocks.

Pilotage.—45 dols. in and out.

Port Charges.—Tonnage Dues:—Paid by consignees and not by the ship; 1 dol. 50 c. gold, per 1,000 kilogrammes. **Stamp Dues:**—Steamer 40 c. Colombian silver, for each way bill, manifest, bill of health, crew roll, list of provisions, permission to unload, to load, and to sail, and for each sobordo. **Provisions:**—At reasonable rates; good water free. **Discharging:** 3 dols. per ton. **Labourers:**—To work on board, 40 to 50 c. per hour. Visé of medical officer, obligatory, 10 dols. gold, or 25 dols. Colombian silver.

The above expenses are in Colombian silver, at, say, 12 dols. to the pound sterling.

ECUADOR.

Sixteen provinces and one territory constitute the Republic of Ecuador. It has an area of about 116,000 square miles, and an estimated population of $1\frac{1}{4}$ millions.

Commerce.—The Customs tariff is clearly formed with the object of producing as large a revenue as possible ; in fact, about 70 per cent. of the entire revenue of the Republic is obtained through the Customs House. In 1907 some 10,000,000 sucres (equal to £1,000,000) was paid to the Customs authorities. The chief imports are textiles, food-stuffs, iron and steel work, and hardware. The staple produce of the Republic is cocoa, the greater portion of which is shipped to the United States and European countries.

Currency, Weights and Measures.—The currency is based upon a gold standard, the condor being equivalent to the English sovereign ; the other coins in circulation are the silver sucre=2s., and a number of nickel and copper pieces. The French metrical system of weights and measures, although the legal standard, has not been adopted by the commercial community, who maintain the old Spanish weight of the quintal=to 101 lb.

Internal Communications.—The Guayaquil and Quito Railway Co. have a line open from Duran to Chasqui ; this they are extending to Quito, about 40 miles. Motor cars run from Quito to Riobamba. Other lines are being built by foreign capitalists and by local authorities for the development of their own local trade. The roads of the country are merely bridle paths. The rivers Guayas, Daule, and Vinces are navigable by river steamers during the rainy season.

General Regulations.—Every shipmaster arriving at any port of the Republic is required, under penalties, to hand over the following papers to the port captain :—1. Bill of health. 2. Sailing licence from port of departure. 3. Roll of crew. 4. List of passengers. To the chief of the coastguard he will hand :—1. The consular manifest, signed by the captain and certified by an Ecuadorian Consul. This manifest must indicate :—(a) The class schooner, brigantine, etc.), flag, name, and tonnage of the ship ; (b) the port of departure, and the port or ports to which the vessel is going ; (c) the name of the shipper or consignor, and of the consignee of the cargo, or, if the goods are to order, a statement to that effect ; (d) marks and numbers of each package ; (e) number of packages of each shipment. If the vessel should have called at and discharged part of her cargo in any other port, the manifest should contain a certificate, legalised by the chief of the Customs of that port, with respect to such discharges. 2. A copy of the bill of lading for each shipment. 3. The closed envelopes addressed by the Consul or by the chief of the Customs at a port of call. 4. List of provisions for the consumption of the crew. 5. List of all articles on board belonging to the captain or crew, or for the use of the vessel.

A stamp law was passed by the Congress of the Ecuadorian Republic, and came into force on January 1, 1887, and the following clauses have a bearing upon the shipping arriving at Ecuadorian ports :—

Ecuador.

"Each copy of a signed bill of lading to be on sealed paper of the value of 30 cents. (7½*d.*) for shipment from Ecuador.

"Ship's manifest to bear each a stamp of 10 sucres (20*s.*).

"Bills of health for vessels to bear a stamp of 5 sucres (10*s.*).

"Permit to load or discharge a vessel to bear a stamp of 10 sucres (20*s.*).

"Registers of cargo to bear a stamp of 10 sucres (20*s.*)."

All vessels are subject to a municipal tax of 1 $\frac{1}{16}$ c. per reg. ton when arriving at Guayaquil with general cargo.

Ecuador has adopted the regulations for preventing collisions at sea.

Every vessel coming to an Ecuadorian port must be provided with a consular manifest, certified by the Ecuadorian Consul, of all the cargo on board for that port; and in case of short or over delivery of packages must prove the cause of same.

Port Charges.—**Light Dues** :—At each port, 10 cents. of a sucre per ton reg. for each light established at the port; foreign men-of-war and whalers are exempt. **Pilotage Dues** :—Compulsory. 2.50 sucres (5*s.*) per foot draught from Puná to Guayaquil, for all vessels entering the port of Guayaquil; men-of-war to be exempt from pilotage. **Health Dues** :—10 sucres (10*s.*) on each vessel of over 30 tons, entering the port, and 2 sucres (4*s.*) for each crew list certified. **Wharf Dues** :—0.50 sucre (1*s.*) for each ton of cargo discharged.

Registration Dues :—Dues on registration of national vessels :—

From	10 to	20 tons	Sucres.
"	21 "	50 "	1
"	51 "	100 "	2
"	101 "	200 "	5
"	201 "	300 "	10
"	301 "	and upwards	15
			20

BAHIA DE CARAQUEZ.

Bahia de Caraquez is in lat. 0°45' S., long. 80°40' W.

Population.—3,000.

Imports.—Dry goods, groceries, etc.

Exports.—Cocoa, ivory nuts, coffee, rubber, etc.

Accommodation.—There is a depth of 5 fathoms at high water of 4 fathoms at low water, and of 3½ fathoms at lowest spring tides.

Port Charges.—**Boat Hire** :—10 shillings. **Ballast** :—6*s.* per ton. **Labour** :—3*s.* per day.

Pro Forma Charges on a steamer of 2,000 tons reg., with cargo of general merchandise in and ballast out, drawing 28 ft. loaded :—

	£	s.	d.
Brokerage		5	0 0
Boat hire	0	10	0
Sailing licence	0	1	0
Permit to unload	1	0	0
Permit to load	1	0	0
Bill of health	0	8	0

£7 19 0

ESMERALDAS.

Esmeraldas, in lat. 0°57' N., long. 79°40' W., is situated at the mouth of the River Esmeraldas, and is the capital of the province of the same name. It is an import harbour.

Ecuador—Esmeraldas (*continued*).

Population.—4,000.

Imports.—General merchandise.

Exports.—Ivory nuts, rubber, and tobacco.

Accommodation.—This is a tidal port, with anchorage 3 miles from the town. Vessels anchor outside the bar, and are loaded and discharged by means of launches which cross the bar at half-tide. The depth on the bar varies from 1 ft. at lowest tide to 10 ft. at high tide. The currents in the anchorage are very strong, and the depth varies from 5 to 90 fathoms, with shifting sand bottom. Anchors must be carefully watched, and if necessary raised every day.

Port Charges.—Entrance and Clearance:—20 sucres each. **Light Dues:**—·05 sucre per reg. ton for each light.

GUAYAQUIL.

Guayaquil, in lat. 2°14' S., long. 79°55' W., is the principal seaport of Ecuador. Distance from Liverpool by sea, 10,600 miles.

Population.—51,000.

Imports.—Cottons, woollens, wines, spirits, liqueurs, groceries, soap, metals, flour, linen, and stationery.

Exports.—Cocoa, straw hats, cotton, timber, bark, hides, orchilla, tobacco, ivory nuts, sarsaparilla, canes, indiarubber, and coffee.

Accommodation.—Vessels drawing up to 24 ft. can reach the city. The anchorage is safe and commodious in 5 to 7 fathoms with a mud bottom. The rainy season lasts from the beginning of January to about the end of April. At this time snags come down the river, and a good lookout should be kept. The tide sometimes rises here 16 ft.

Captains of vessels on entering the river of Guayaquil call at the anchorage at Puna Island, where they receive the coastguardsman and the pilot who bring the vessel to Guayaquil. If at night, the captain will anchor off the "Astillero," to the south of the city; but if in the daytime, he will proceed to the front of the Government wharf, where the ship will be visited by the captain of the port, the chief of the coastguard, and a physician, immediately after anchoring.

Vessels lie in front of the city with two anchors, with a cable 45 fathoms long, and just as near the shore as will permit the ship to swing freely. Repairs can be done to boilers and engines up to 50 h.p. Lighters carry about 40 to 100 tons. Provisions are cheaper than at Callao.

Shipmasters must produce two copies of their manifest (in Spanish) within 24 hours of their arrival, and also a list of stores. Yellow fever is prevalent during the rainy season only.

Pilotage.—Inwards, per foot, English draught, 2 sucres 50 c.; and the same outwards.

Port Charges.—Lighthouse Fee:—Per ton of cargo delivered, 40 c. **Wharfage:**—Per ton of cargo delivered, 50 c. **Municipality:**—Per ton reg. net, sailing vessels, 4½ c.; steamers, 3½ c. **Agency:**—Receiving and dispatching vessels, 75 sucres. **Ballast:**—As per quality, sand or stone. 1 sucre 80 c. to 3 sucres. **Water:**—In quantities of not less than 15 tons, 3 sucres per ton. **Labour:**—30 c. per hour. **Loading and Discharging:**—

Ecuador—Guayaquil (*continued*).

3 sucres (6s.) per ton (Spanish) of 2,000 lb., or 40 Spanish cubic feet (about 33 English cubic feet). **Commission** :—For transacting the ship's business (if no other commission is charged), from 50 sucres to 100 sucres according to the size of the vessel. **Provisions** :—Meat 18 c. to 30 c. per lb., bread 20 c. to 25 c. per lb., potatoes (sacks of 200 lb.), 5 sucres to 8 sucres per quintal.

FIXED EXPENSES.

	Suc.	c.
Sealed paper.—Entrance	00	50
" Discharge	00	50
" Sailing	00	50
" Licence	00	60
" Permit to discharge	10	00
" Manifest	10	00
" Permit to load	10	00
" Sailing register	10	00
" Bill of health	5	00
Board of health fee	5	00
Roll	2	00
Port fees	7	50
Post Office fee	00	80
Consulate of commerce fee	00	80

PORT RULES.

Vessels bound to Guayaquil must touch at the anchorage off Puná, where they will find the revenue guard and a pilot. The master must give the ship's papers to the captain of the port, and his manifest to the revenue officer.

The cables must be kept clear, under penalty of a fine of from 4 to 20 sucres.

Ballast can only be thrown overboard by permission of the captain of the port, and in the place he points out.

Shipmasters must present to the captain of the port an exact list of passengers and crew.

No communication is allowed with the shore previous to the visit of the captain of the port under a penalty.

Every vessel arriving at Guayaquil is bound by law to discharge alongside the wharf. If of coal, lumber, or other cargo in bulk, permission can be obtained to discharge outside, but wharf dues have to be paid.

MANTA.

Manta, in lat. 1°0' S., long. 80°52' W., is the seaport of the town of Monte Christi.

Population.—2,000.

Imports.—General merchandise.

Exports.—Ivory nuts, hats, coffee, hides, rubber, cocoa, and cotton.

Accommodation.—The anchorage is to the N. of the houses in the village, in 6 fathoms, opposite the lighthouse. The landing is good.

Port Charges.—**Water** :—Can be obtained at 60 c. silver, for 18 gallons. **Light Dues** :—10 c. silver per reg. ton for sailing vessels or steamers. **Clearance** :—25 sucres. **Bill of Health** :—If required, 5 sucres 25 c. **Landing Due** :—2½ c. per foot. **Stevedore** :—1 sucre 50 c. per ton, loading or discharging. **Ballast** :—2 sucres per ton.

Ecuador.**PORT BALLENITA (SANTA ELENA).**

Ballenita is in lat. $2^{\circ}14'$ S., long. $80^{\circ}52'$ W.

Exports.—Hats, ivory, nuts, and salt.

Accommodation.—There is a good anchorage, with sufficient depth of water for large vessels. The town is about $1\frac{1}{2}$ miles from the shore. Landing is easy at the Custom House. There is $3\frac{1}{4}$ fathoms at low water, close to the Custom House. Spring tides rise 8 ft. The cable station is at **Palina**, about 8 miles from Ballenita.

Ballenita is a minor port, only open for exportation. The chief trade is in salt, obtained from salt pans in the vicinity.

Light Dues :—5 c. per reg. ton for steamers or sailing vessels.

FALKLAND ISLANDS.

The Falkland Islands, consisting of East and West Falkland, and about one hundred other islands, constitute a British Crown Colony. These islands are situated in the South Atlantic, about 300 miles E. of Magellan Straits. They have a total area of 6,500 square miles, with a population of 2,266. The annual trade is valued at about three hundred thousand pound sterling, the imports in 1907 having amounted to £73,619, and the exports to £246,435. The chief articles of import are wearing apparel, haberdashery, building material, furniture, hardware, and ship's chandlery; whilst the exports consist of wool, tallow, sheep-skins, hides, and sealskins. The trade is principally with the United Kingdom.

The fixed light at Cape Pembroke lighthouse has been replaced by a white flashing light. The new light shows one flash every 10 seconds as follows, viz. :—Flash, .65 seconds, eclipse, 9.35 seconds, occupying a total period of 10 seconds. The intensity of this light is equal to about 105,000 candles.

There is a telephone communication between Stanley, the capital, and Port Darwin on Darwin Harbour, a distance of about 60 miles. British and foreign mails are conveyed by means of a four-weekly service between Liverpool and Valparaiso, and thence by an inter-insular service performed by vessels owned by the Falkland Islands Co.

The currency, weights and measures are the same as those in use in Great Britain, with the addition of a Government paper currency which, at the close of the year 1907, amounted to £6,600, made up as follows: £5 notes (£2,915), £1 notes (£3,572), and 5s. notes (£113).

STANLEY.

Stanley, the seat of Government, and only town, is situated on a nearly land-locked harbour, on the N.E. of East Falkland, in lat. 51°38' S., long. 57°55' W., and is a port of call for vessels passing round Cape Horn, disabled, or in need of supplies.

Population.—About 900.

Exports.—Hides, seals, whale oil, sealskins, wool, and bones.

Accommodation.—The harbour is a natural one in the form of a large dock, and affords excellent anchorage in almost any part for vessels of the largest size. A sea-going tug and harbour launch with salvage pumps are maintained by the Falkland Islands Co. The largest vessels can enter the port. There is no bar. The depth at the entrance at ordinary springs is, high water, 45 ft.; low water, 41 ft. There are two jetties, each 250 ft. long, reached at high springs by vessels of 14 ft. draught. There are six hulks for loading and discharging, one supplied with a steam winch.

Port Charges.—A charge of 6s. per foot inwards, and 3s. outwards, is made, which includes light, pilotage, and harbour dues. **Labour:**—8s. per day. Donkey engine and wool screws can be hired. **Ballast:**—1s. per ton by ship's own boats, or supplied at 6s. 6d. per ton. **Water:**—Fetched by ship's boats from Government reservoir, 2s. 6d. per ton; if delivered alongside in the harbour, 12s. 6d. per ton under 5 tons, and 10s. per ton over 5 tons; if delivered outside the harbour, 15s. per ton. **Coal:**—Steam coal, 55s. per ton. **Provisions:**—Vegetables, 1d. to 2½d. per lb.; mutton, 2d. per lb.; beef, 4d. per lb.; biscuit, 24s. per cwt. All kinds of ship's chandlery is supplied on reasonable terms by the Falkland Islands Co., which also undertakes shipping repairs.

GUIANA (BRITISH).

British Guiana includes the settlements of Demerara, Essequibo, and Berbice, and is the only British territory on the mainland of South America. It extends along the N.E. coast from the mouth of the Orinoco River to that of the Corentyn. It has a total area of 90,277 miles, and a population estimated at about 304,000, of whom it may be said 6 per cent. only are white. During the financial year ended June 30, 1907, the total trade of the colony amounted to £3,533,911, of which £1,690,804 represented the value of the imports, the exports being returned at £1,843,107. The chief articles of export from the colony are sugar, gold, rum, diamonds, molasses, etc., the principal imports including flour, tissues, machinery, manures, hardware, cutlery, tools, etc. The colony is being slowly yet systematically opened up by the construction of railways, of which there is at the time of writing (1908) some 94 miles of line open for public traffic, in addition to a number under construction. The post office and telegraph service has been established on modern lines, the principal towns, Georgetown and New Amsterdam, having the further advantage of a telephone system. The colonial currency is gold dollars valued at about 4s. 2d. each. The subsidiary coins consist of British silver and bronze coins, and a local coin which passes under the name of bits. British gold is readily accepted in all commercial operations.

Landing and Storing of Petroleum.—On January 1, 1909, new regulations respecting the landing and storing of petroleum came into force. These regulations provide for the prohibition of the importation into the colony of "volatile petroleum," unless packed in strong iron or steel drums of not more than 50 gallons capacity, and of "gasolene" unless packed in similar drums of not more than 10 gallons capacity. Volatile petroleum, intended to be unloaded from vessels arriving from abroad at the ports of Georgetown or New Amsterdam, may only be discharged by the master under the supervision of the Customs Department either into some other vessel before the importing vessel goes alongside any wharf or "stelling," or at any wharf or "stelling." Such volatile petroleum must be delivered forthwith if the destination is outside Georgetown or New Amsterdam, and if its destination is within the limits of these towns it must be discharged at any wharf or "stelling," from whence it must be removed without delay to a magazine or other place duly appointed for its storage. Such petroleum can only be removed therefrom by the written order of the Comptroller of Customs. No volatile petroleum may be removed to any place within Georgetown or New Amsterdam, except to a magazine appointed for the storage of specially dangerous goods or from any magazine to any other magazine or other place duly appointed for its storage within those places, unless it is packed in drums as above stated, or kept in separate glass, earthenware, or metal vessels, each of which contains not more than one gallon and is securely stoppered, and such petroleum can then only be removed under certain prescribed conditions. It is further laid down in the regulations that "volatile petroleum" shall include petroleum, petrol, gasolene, naphtha, benzine, kerosene oil, rock oil, Rangoon oil, Burma oil, paraffin oil, and other products, and any oil made from petroleum, coal schist, peat and other bituminous substance, and any product of them which, when tested

Guiana (British).

in prescribed manner, gives forth an inflammable vapour at a temperature below 85° F. "Gasolene" is held to mean volatile petroleum which boils at temperatures below 150° F. and which has a specific gravity lower than 680 at 60° F.

GEORGETOWN.

Georgetown, in lat. 6°53' N., long. 58°4' W., is the capital of the colony of Demerara, and is situated on the right bank of the Demerara River, just within its mouth. Distance from Liverpool, 3,960 miles.

Population.—About 53,176.

Imports.—Clothing, cotton goods, manure, general merchandise, etc.

Exports.—Sugar, rum, molasses, hardwood timber, greenheart, oil of iron, old copper, and Wallaba shingles.

Accommodation.—There is only 9 ft. of water on the bar at low water, but steamers drawing up to 18 ft. can cross at spring tides. The bottom is stiff clay and mud. The land E. and W. of the river mouth is low and flat, and the only guides for making it are the lead, and lat. and long. There is a dry dock 212 ft. long over all, 44 ft. wide at the entrance at high springs, and 9½ ft. on the sill at high water spring tides. There is a small patent slip also. Extensive repairs can be executed.

Time Signals.—Chronometers can be checked. A red ball is hoisted on a flagstaff near the General Post Office 5 minutes before the signal. The ball is dropped at noon Demerara Post Office mean time, equal to 3 h 52 m. 39.5 s. Greenwich mean time. The signal is made on Wednesday and Saturday.

Pilotage.—Not compulsory. Rates as follows, for vessels drawing—

Dols. c.						Dols. c.					
10 ft. or under.	.	.	.	.	8 00	16 ft. and above 15 ft.	.	.	.	18 00
11 and above 10 ft.	.	.	.	.	9 00	17 "	"	16 "	.	20 00
12 "	"	11 "	.	.	11 00	18 "	"	17 "	.	25 00	
13 "	"	12 "	.	.	13 00	19 "	"	18 "	.	28 00	
14 "	"	13 "	.	.	15 00	20 "	"	19 "	.	32 00	
15 "	"	14 "	.	.	16 00	21 "	"	20 "	.	35 00	

For vessels shifting moorings in the river, 3 dols. Pilots reside on board the light-vessel, which is moored in 3 fathoms 8¼ miles from the mouth of the river. **Towage.**—As follows:—

RATES FOR TOWING ACROSS THE DEMERARA BAR.

Registered Tonnage of Sailing Vessel.	INWARDS.						Registered Tonnage of Sailing Vessel.	OUTWARDS.											
	Draft not exceeding							Draft not exceeding											
	ft. 15	ft. 16	ft. 17	ft. 18	ft. 19	ft. 20		ft. 11	ft. 12	ft. 13	ft. 14	ft. 15	ft. 16	ft. 17	ft. 17½	ft. 18			
	\$	\$	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$		
Up to 299	25	25	30	40	60	70	Up to 199	15	15	15	15	15	20	—	—	—	—		
300 " 399							20	20	20	20	20	25	—	—	—	—	—	—	
400 " 499							30	35	40	40	40	45	50	80	100	10	10	10	
500 " 599							40	45	45	50	50	60	70	100	140	18	18	18	
600 " 699							45	50	60	60	80	110	60	65	70	75	75	100	120	140	18
700 " 799	50	60	70	70	90	130	700 " 799	70	80	85	95	100	120	140	160	200	25		
800 " 899	55	70	80	90	100	150	800 " 899	—	—	100	120	130	140	160	180	220	30		
900 " 999	60	80	90	100	130	180	900 " 999	—	—	120	140	150	160	180	200	240	30		
1,000 " 1,099	65	90	100	130	160	210	1,000 " 1,099	—	—	140	150	170	190	210	230	260	30		
1,100 " 1,199	70	100	110	150	190	240	1,100 " 1,199	—	—	170	180	190	220	240	260	—	—		
1,200 " 1,299	75	110	120	170	220	270	1,200 " 1,299	—	—	200	210	220	240	270	300	—	—		
1,300 " 1,399	80	120	140	190	250	300	1,300 " 1,399	—	—	220	230	240	260	300	340	—	—		
1,400 " 1,499	90	130	160	210	280	330	1,400 " 1,499	—	—	240	250	260	280	340	380	—	—		
1,500 " 1,599	100	140	170	230	310	360	1,500 " 1,599	—	—	260	270	280	300	380	420	—	—		
1,600 " 1,699	120	150	180	250	340	390	1,600 " 1,699	—	—	280	290	300	350	420	460	—	—		
1,700 " 1,799	150	160	200	270	370	450	1,700 " 1,799	—	—	300	310	320	375	460	480	—	—		

Guiana (British)—Georgetown (continued).

Port Charges.—Tonnage Dues :—Vessels up to 70 reg. tons, 5 c. per ton; above 70 tons, 25 c. per ton. **Light Dues :—**4 c. per reg. ton. **Health Officer :—**Visiting vessels for inspection, 3 dols. Each visit, when in quarantine, 2 dols. (Steamers have the option of paying on registered tonnage at 25 c. per ton, or on amount of cargo loaded ^{and} or discharged at 25 c. per ton.) **Stevedore's Charges :—**Bag sugar, 1½ to 2 c. per bag; rum and molasses, 14 to 16 c. per puncheon. **Lighterage :—**Coal, 40 c. per ton; sugar, 3 to 3½ c. per bag; rum and molasses, 16 c. per puncheon; general cargo according to private agreement. **Ballast :—**Sand, 75 c. to 1 dol. free alongside. **Hawser :—**A charge of 5 dols. is made for hire of tug's hawser, except when berthing, when the charge is 1 dol. **Water :—**1 c. per gallon, pumped on board. **Provisions :—**Barrel of biscuits, 3 dols.; sack of rice, 4 dols.; coffee, 20 c. per lb.; barrel of potatoes, 4 dols.; fresh meat, 12 c. per lb.

ESSEQUIBO RIVER.

The entrance to the Essequibo River, in lat. 6°55' N., long. 58°20' W., is open to the N.E., but is blocked up by low wooded islands and mud banks. The bar has a depth of 10 ft. at low water spring tides, and 19 ft. at high water spring tides, but after crossing the bar, the water in the river gradually deepens. Vessels of 18 ft. draught can get up to Palmas Point, about 50 miles from the mouth, where there is 5 to 6 fathoms of water.

Charges.—Stevedore's charges for loading greenheart, 13 dols. per 1000 ft. (Contracted for at Georgetown.)

NEW AMSTERDAM.

New Amsterdam, in lat. 6°10' N., long. 57°30' W., is situated upon the Berbice River, about 3 miles from its mouth, and about 12 miles from the bar.

Population.—About 11,000.

Imports.—Dry goods.

Exports.—Sugar, rum, timber, balata, hides, etc.

Accommodation.—There is a bar of mud across the entrance to the river, with a depth of 17 ft. at high water spring tides and 6 ft. at low water; the rise and fall of the tide being 11 ft. at springs and 6 ft. at neaps. The bottom is mostly soft mud. At this port the river is about 2 miles wide, with a depth off the town of 11 ft. 6 in.; at high water there is 16 to 18 ft. The anchorage is perfectly safe, and ships can come alongside the wharves, which lie a little way off in the stream, but cargoes are generally taken alongside the wharves. The depth of water increases considerably as the river is ascended, and is free from any kind of obstruction, large vessels having loaded timber 180 miles up.

Pilotage.—Not compulsory.

				Dols. c.	
For each vessel of the draught of	8 ft. or under .	.	.	.	8 00
" " " "	9 " and above 8 ft.	.	.	.	9 00
" " " "	10 " "	9 "	.	.	12 00
" " " "	11 " "	10 "	.	.	16 00
" " " "	12 " "	11 "	.	.	18 00
" " " "	13 " "	12 "	.	.	23 00
" " " "	14 " "	13 "	.	.	28 00
" " " "	14 " and upwards	.	.	.	32 00

Guiana (British)—New Amsterdam (*continued*).

Pilots are obtained at the Demerara light vessel.

Port Charges.—Tonnage Dues :—Vessels under 75 tons, 5 c. per ton. Vessels over 75 tons, 25 c. per ton. **Light Dues :**—4 c. per ton. **Stevedore :**—Stowing sugar 20 c. to 24 c. per hhd. ; 14 c. per tierce ; 4 c. per barrel ; 2 c. per bag ; rum, 16 c. to 20 c. per puncheon ; other goods in proportion, 8 barrels or 9 bags of sugar=8 hhd. **Brokerage :**—£5 ; commission for loading vessels, 5 per cent. ; advancing money, $2\frac{1}{2}$ per cent. **Provisions :**—Beef, 16 c. per lb. ; vegetables, dear.

Pro Forma Charges on a steamer of 1,025 tons reg. :—

	Dols.	e.
Telegrams, etc.	57	85
Light dues	41	00
Bill of health	5	00
Stevedore, discharging inward cargo, and stowing outward ditto	71	66
Stevedore, ditto	29	58
Extra portorage, night work	9	28
Custom House officer's overtime	7	68
Tonnage dues	256	25
Pilotage	32	00
Cartage, landing charges, lighterage, etc.	106	56
Sundry accounts	96	48

713 34 = £148 12s. 3d.

GUIANA (DUTCH).

Dutch Guiana lies between the British and French colonies of the same name on the north coast of South America. It has an area of 46,060 square miles, with a population of about 78,000, mostly negroes. The main products of the colony are sugar, coffee, cacao, rubber, rum, and molasses. Gold mining is also actively prosecuted. The currency, weights and measures are the same as those of Holland.

COPPENAME.

Coppename river lies about 40 miles W. of Surinam.

Accommodation.—There is only 12 ft. of water on the bar, and a depth inside of about 18 ft

Pilotage.—10 ft. draught, 15 fl. ; and 5 fl. extra for every additional foot.

NICKERIE.

Nickerie is in lat. $5^{\circ}55'$ N., long. $56^{\circ}50'$ W. The new town of Nickerie is 8 miles from the mouth of the Nickerie river.

Population.—5,960.

Exports.—Sugar, rum, cocoa, coffee, balata, timber, etc.

Accommodation.—Vessels discharge and load alongside the wharves, where there is plenty of water and no danger, though the current is very strong. There is a depth of water on the bar, at high water springs, of 14 to $16\frac{1}{2}$ ft. Vessels of 13 ft. can come here.

It is advisable for vessels to anchor the moment the Corentyn river is in sight, say 12 miles from the shore, then to signal for a pilot. There is no mooring ground.

Mails arrive for Paramaribo and also for Georgetown, British Guiana, once a fortnight per Government steamer. Supplies can be procured in limited quantities. Water of good quality is plentiful. The general health of the port is considered fairly good, although sickness, such as malaria fever, sometimes prevails.

Bills of health are delivered at the Watch-house at the mouth of the Nickerie river.

Pilotage.—£1 5s. for vessels drawing 9 ft., and 8s. 4d. for every foot above that draught.

Port Charges.—**Customs Fees** :—When loading or discharging at private wharves, or in the river, 5s. per day. **Clearance** :—£10. **Ship-roker's Commission** :—On freight, 5 per cent. when chartered here. **Stevedore** :—As per agreement. **Ballast** :—Shell and sand, taken from the shore.

PARAMARIBO.

Paramaribo is in lat. $5^{\circ}45'$ N., long. $55^{\circ}20'$ W.

Population.—About 34,870.

Imports.—Manufactured goods, salt fish, wheat, flour, beef, etc.

Guiana (Dutch)—Paramaribo (*continued*).

Exports.—Coffee, rum, sugar, cocoa, gold, etc.

Accommodation.—Surinam, the principal river of Dutch Guiana, is navigable at spring tides for vessels drawing 20 to 21 ft., and at neaps for vessels drawing 16 to 18 ft., to Paramaribo, the chief town and seat of government, which is situated on the left bank, about 12 miles from its mouth. In front of the town there is anchorage in 5 to 6 fathoms of water. There is 520 ft. of quayage with from 11 to 20 ft. alongside, according to the state of the tide, and 75 ft. with from 16 to 24 ft. alongside. The Dutch Royal Mail Co. have a quay 200 ft. long with 15 to 23 ft. alongside, according to the state of the tide. Vessels drawing 22 ft. can come up to the latter quay, and vessels of 19 ft. to the others. There is a crane to lift up to 20 tons.

Vessels approaching the rivers Surinam and Nickerie would do well to anchor outside the lightship, as at low water spring tides there is only 13 ft. of water at the Surinam lightship, and generally there is a heavy swell.

All vessels coming here should have a bill of health, countersigned by the Dutch Consul. All vessels must come to at Fort Amsterdam. Merchant vessels can obtain water from wells in the town.

Pilotage.—There are no regular pilots. A man from the lightship comes off, who pilots vessels up to Paramaribo. Vessels inward bound should keep well to windward of the entrance, as there is a strong current of $2\frac{1}{2}$ to $3\frac{1}{2}$ knots running to leeward. Vessels drawing 10 ft., 15 fl.; 5 fl. additional for every extra foot.

Port Charges.—**Doctor's Fee** :—3 fl. **Consular Fee** :—10 fl. 77 c.
Harbour-master's Fee :—8 fl. **Police Fee** :—1 fl. **Government Secretary** :—1 fl. 50 c.

GUIANA (FRENCH).

The French colony in Guiana has an area of about 34,000 square miles, and a population, according to the last census (1901), of 32,908. The trade is of an annual value of a little less than one million pounds sterling, the imports in 1906 amounting to £576,758 and the exports to £416,222. There are a few good roads connecting the port of Cayenne with various centres of population in the interior. Cayenne is visited once a month by a mail steamer from Martinique.

CAYENNE.

Cayenne is in lat. $4^{\circ}50'$ N., long. $52^{\circ}29'$ W.

The town is very healthy.

Population.—About 12,426.

Imports.—Cotton, loaf sugar, flour, skins, mining implements, preserved provisions, and manufactured goods.

Exports.—Gold, cocoa, phosphates, timber, rosewood essence, and hides.

Accommodation.—Vessels drawing 14 ft. can anchor close to the town, and remain afloat at low water. Ships drawing more than 14 ft. anchor about 6 miles from Cayenne at the *Enfant Perdu*, a rock on which there is a lighthouse. Tides rise 6 to 11 ft. There are no facilities for repairs. Changes take place yearly in the depth of water, so that strangers should always employ a pilot. There is one quay.

Water, for shipping, is abundant and good. Water dues are paid by every vessel, whether supplies are taken or not. Provisions are good and fairly plentiful. Sand ballast is obtainable.

PARAGUAY.

The Republic of Paraguay has an area of 98,000 square miles, and a population estimated in 1905 at about 631,300. The trade is of an annual value of £2,446,765, the imports during 1907 having amounted to £1,615,483 and the exports to £831,282. The only port of the Republic is Asuncion, at which during 1907 some 2,000 steamers and half that number of sailing vessels entered and cleared. The carrying trade between Montevideo (in Uruguay) and Asuncion is at the present practically a monopoly in the hands of one company, but efforts are being made to break this down, tugs and lighters having been placed upon the river for that purpose. The Government are carrying out dredging operations with the object of deepening the channel and facilitating traffic between the Plate and this port.

The Paraguayan Central Railway Co. have the entire control of the railway system which connects Asuncion with Pirapo. This line is to be extended to Villa Encarnación, a town on the River Parana, in the extreme S. of the Republic.

The monetary system is identical with that of the Argentine Republic, i.e., 5 gold dollars=£1. Paper money is, however, the chief circulating medium, the exchange being 5 dols. gold=50 dols. paper=£1.

The weights and measures employed in the Argentine Republic are also generally used in Paraguay, although in some centres the old Spanish measures are still in use. These are as under :—

The quintal	= 101.40 lb. avoirdupois.
„ arroba	= 25.35 lb. „
„ fanega	= 1½ imperial bushel.
„ sino (land measure)	= 69½ Eng. sq. yards.
„ legua cuadrada	= 12½ Eng. sq. miles.

ASUNCION.

Asuncion is in lat. 25°25' S., long. 57°38' W.

Population.—60,260.

Imports.—Woollens, linens, and cottons.

Exports.—Tobacco, hides, oranges, timber, etc.

Accommodation.—There is a depth of 18 ft. at high water, and of 6 ft. at low water. There are four wharves here.

Port Charges.—**Outward Register** :—30 dols. **Measurement Fee and Certificate** :—700 dols. **Inward Register** :—10 dols. **Customs Charges** —Registration entering, 180 dols.; leaving, 180 dols.; manifest entering 100 dols.; leaving, 100 dols.; boat and stamp, 6 dols. 50 c. All paper currency. **Health Officer Fees** :—12 dols. gold. **Argentine Consular Fees** —12 dols. gold. **Commission** :—2 per cent. on freights up river; 5 per cent. on freights down river.

PERU.

The Republic of Peru is on the western side of South America. It has a coast line of 1,520 miles, and an area of 695,733 square miles. The population has been variously estimated at between 3,000,000 and 4,610,000, but probably does not exceed 4,000,000, the figures which have been accepted by the London Stock Exchange as a basis for computation. The executive authority is in the hands of the President acting through a Cabinet of six Ministers, the legislative power being vested in a Senate and House of Representatives.

Commerce.—The trade of the country, amounting in 1907 to £11,262,519 (imports £5,514,787, exports £5,747,732), is chiefly with Great Britain and the United States, both of which have concluded treaties providing for reciprocal freedom of commerce and navigation.

Mercantile Marine.—The commercial navy of Peru has a total tonnage of 30,322, made up of 5,283 tons steam and 25,039 tons sail.

Internal Communications.—The railway system consists of about 1,471 miles, of which the major portion has a gauge of 4 ft. 8½ in. Electric railways connect Lima with Chorrillos and with Callao. The Peruvian Corporation beside controlling the principal railroads also work a navigation system on Lake Titicaca and the Desaguadero river. The same Corporation are also interested in the construction of the Chiro canal and the Mollendo port works.

Only feeble streams flow into the Pacific, but all the very numerous rivers of the eastern slope of Peru are included in the Amazon basin and belong to one or another of the three secondary basins of the Marañon, the Huallaga and the Ucayali, which are entirely in Peruvian territory, besides a few tributaries of the Purus and Madeira. Ocean steamers now regularly ascend the Amazon and Marañon to Iquitos, 2,200 miles from the Atlantic, and light draught steamers prolong navigation for 825 miles up the Ucayali, Pachitea, and Pichis rivers.

The construction of good roads and bridges throughout the country is being pressed forward. A State post, telegraph, and telephone system has been established.

Currency, Weights and Measures.—Peru has a gold standard. The gold coins are the libra peruana=the English sovereign, which is also a legal tender; the media libra=the half sovereign, and the one-fifth of a libra=4s. The silver coins are the following: The sol (ten of which are equivalent to £1), the half-sol, the one-fifth sol, the one-tenth sol, and the one-twentieth sol. The bronze coins are one and two centavo pieces. One hundred centavos=one sol. Weights and measures:—The metric system has been legally established, but, except so far as the Customs authorities are concerned, the Spanish system still prevails to a great extent.

WEIGHTS.

1 libra	1-0143 lb.
25 lb. make 1 arroba (quarter)	25-3582 „
4 arrobas make 1 quintal (cwt.).	101-4329 „
20 quintals make 1 tonelada (ton)	2,028-6589 „

Peru.**MEASURES OF LENGTH.**

1 pulgada (inch)	.	.	.	.	.	.	0.91417 inches.
12 pulgadas make 1 pie (foot)	10.97008 "
3 pies make 1 vara (yard)	32.91024 "

DRY MEASURE.

1 fanega	1.5503 bushels.
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Port Charges.—Tonnage Dues :—20 c. per reg. ton, payable every six months. **Hospital Dues :—**4 c. per reg. ton, payable every six months. **Light Dues :—**2 c. per reg. ton, payable every time a vessel enters the port. Steamers permitted to engage in the coasting trade pay only $\frac{1}{2}$ c. per ton.

	Sols.	c.
Sailing licence at ports of entry	4	00
At other ports	2	00
Roll of crew of steamer and sailing vessel at ports of entry	1	00
" " " at other ports	0	50
For each ton of ballast taken by foreign vessels when the collection of the due is not made over to the Municipality (at Callao the charge for ballast includes Municipality due)	0	40
For each ton of water when due is not made over to Municipality	0	40

Ports of Entry.—The principal ports of entry are :—Payta, Eten, Pacasmayo, Salaverry, Callao, Pisco, Mollendo, and Ylo, and Iquitos on the River Amazon.

The sub-ports are : Tumbes, Talara, Pimentel, Chimbote, Samanco, Casma, Huacho, Cerro Azul, Tambo de Mora, Lomas, Chala, and Leticia on the River Amazon.

The creeks where trade is only permitted by special licence are : Zorritos, Máncora, Colán, Sechura, San José, Malabrigo, Cherrepe, Huanchaco, San Bartolomé de Chao, Guañape, Santa, Huarmey, Supe, Salinas de Huacho, Chancay, Ancón, Chilca, Mala, Salinas de Otuma, Atico, Quilca and Islay, Punta de Sal, Bocapan, Bermejo, Caballos, Puerto Inglés, and Santa Ana.

Foreign steamship companies having a fixed itinerary and a special authorization are permitted to engage in the coasting trade on the same footing as Peruvian vessels. A foreign steamer not belonging to any company trading regularly on the coast of Peru may also engage exclusively in the coasting trade, but she is not entitled to the reduction of dues accorded to the companies above referred to, and must obtain licences at ports of entry.

A foreign sailing vessel may enter as many subports or creeks as the master may wish to call at for the purpose of completing her cargo, but before being allowed to do so the necessary licence must be obtained from the collector of customs at the port of entry, and she must sail from the port of entry for the said subports or creeks in ballast or with products of the country. However, if she should have foreign merchandise on board in transit for other ports of entry in Peru or for a foreign country, she will also be permitted to enter such subports or creeks to take in cargo, but in that case a Custom House officer will be placed on board at the expense of the ship. A foreign sailing vessel is also permitted to call at subports and creeks to unload machinery.

General Regulations.—The following is a synopsis of the clauses which it is most necessary shipowners, masters, and exporters to Peru should bear in mind :—

1. Shipmasters going to Peruvian ports with cargoes should correctly

Peru.

manifest the number of the packages and marks. Should a mistake be made, rectification will be permitted within 48 hours.

2. Every vessel, whatever may be her nationality, bound for Peru, must obtain from the Peruvian Consular officer, at the port of departure, a bill of health, if it cannot be obtained from the local authorities; but if issued by the latter, it must be viséd by the Consular officer. Vessels arriving at Peruvian ports without the bill of health required by the sanitary regulations of the country are subject to a fine and to be placed in quarantine. The duration of quarantine varies greatly; it may be of only 3 to 5 days' duration, or it may last as long as 15 days. It has also happened that vessels which had fatal cases of contagious disease during the voyage were not received at all and had to leave the coast. The Peruvian Consul levies the following fees: For the visé of the sailing licence, 4 sols; 8 sols for certificate of ballast, and 4 sols for viséing the bill of health, the total amount being equal to 8s.

3. The master or agent of a vessel, whatever may be her nationality, shall present to the Peruvian Consul a manifest made out in quadruplicate, in which shall be described in proper and precise form the following particulars:—

- (I.) The class, nationality, name, and tonnage of the vessel.
- (II.) The port of departure and the port or ports of Peru to which the ship is bound.
- (III.) The name of the shippers and consignees, or if the goods are to order.
- (IV.) The marks and numbers of each package, and the gross weight or ton measurement of the goods put on board by each shipper.
- (V.) The number of packages composing the shipments of each shipper, and the total included in the manifest. There may be only one manifest, which shall show under separate headings the merchandise for each of the Peruvian ports, or it may be made out separately for each port. In the first case, four copies will be required for the following purposes: One for the Custom House at the port of destination, another for the Department of Foreign Affairs, a third for the shipper, and a fourth to be kept in the archives of the Consulate. In the second case, each separate manifest shall also be made out in quadruplicate for the same purposes.

4. All persons intending to ship goods to Peruvian ports must present to the Peruvian Consular officer, at the port of shipment, four copies of invoices of the same tenor, which documents must express the following particulars:—

- (I.) The name of the shipper, the port of shipment, the name of the consignee or that the consignment is to order, the port of destination, and the name of the ship.
- (II.) The mark, numbers, and number and description of the packages, the contents and the gross weight or ton measurement of each package. To express the contents of the packages it will be sufficient to indicate the name, quantity, class, and nature of the goods. The quantities must be expressed in kilogrammes, metres, units, or dozens, in conformity to the manner in which the articles are classified in the tariff for the purpose of levying duty. The Consular officer shall furnish the necessary information to merchants.
- (III.) The value and also the origin of the articles, by which it is under-

Peru.

stood the name of the nation where they were produced or manufactured.

(IV.) In every port where goods are shipped to Peru, but which have to be transhipped in another foreign port, there will be presented to the Peruvian Consular officer the respective invoices and a special manifest expressing the name of the port where the transhipment is to be made, and, if possible, the name of the ship to which the merchandise is to be transhipped. In the invoices it will be sufficient to state that the goods are for transhipment.

5. When a ship is about to sail in ballast for a Peruvian port, the master must make a declaration to that effect before the Peruvian Consular officer at the port of departure. The Consular officer shall legalise it, together with any other documents which may be presented to him.

6. When, by any unforeseen event, a ship on her voyage to Peru should land in a foreign port a portion of the cargo comprised in her manifest, the Peruvian Consular officer at such a port shall legalise the certificate which will be presented to him in respect to the landing of the goods, in conformity to the declarations of the manifest in which they are mentioned.

7. The table of Consular fees will be found posted up in the offices of the Consulates.

ANCON.

Ancon is in lat. $11^{\circ}40'$ S., long. $77^{\circ}12'$ W.

Export.—Sugar.

Accommodation.—The anchorage is 3 or 4 cables N.W. of the town, in 5 to 7 fathoms. The bay is sheltered from all winds except those between N.N.W. and W. Railway connection with Lima, where provisions of all kinds can be obtained. Vessels cannot discharge at this port at present, but when the new bridge is put up the Government intends to allow the shipment of minerals to be made from here, and to permit the discharge of non-dutiable cargoes.

CALLAO.

Callao is in lat. $12^{\circ}5'$ S., long. $77^{\circ}12'$ W.

Population.—31,000.

Imports.—Manufactured goods, coal, railway material, machinery wheat, flour, rice, and timber.

Exports.—Sugar, ores, wool, cotton, coffee, cotton seed, oil cake, etc.

Accommodation.—The length of the outside sea-wall is 1,700 ft. and the width of the dock is 850 ft. The length of quayage is 6,815 ft., and there is one jetty. The width of the entrance is 90 ft., and there is 24 ft. at high water, and 21 ft. at low water over the sill. At the steamers' berths the depth is $23\frac{1}{2}$ ft.; and at the sailing vessels' berths, 13 to 23 ft. There is good anchorage in $4\frac{3}{4}$ fathoms. The wet dock "Muelle y Darsena" is fitted with steam cranes, with a lifting capacity of 3 tons, and iron sheers with a lifting capacity of 40 tons. A steam crane is about to be erected on the dock, capable of lifting 50 tons in place of the iron sheers. There are several basins with quays where vessels can load alongside. No floating dock exists at the present time, but negotiations are being made for a floating dock to be towed from England. Two railways, the termini of which are close to the mole head, connect the port with the capital, about $8\frac{1}{2}$ miles inland. There is also a constant service of electric trams between Callao

Peru—Callao (*continued*).

and Lima. Vessels coal from launches. Supplies of all kinds may be obtained. Water can be obtained from pipes which project from the side of the moles, and it is also brought off in tanks and pumped on board. Wood is scarce and dear.

Climate, mild and healthy.

Pilotage.—Not compulsory.

Port Charges.—During a term of 25 years, to be reckoned from 1887, the Dock Company enjoys the exclusive privilege of loading and discharging all vessels measuring over 20 tons, which enter the Bay of Callao. Transshipments are free if in the bay and before entering the basin; but if they take place inside they are undertaken by the Basin Company. No transshipment is allowed after the vessel has been five days in the basin, except by paying the charges for discharging and loading. There are private arrangements with steamship companies. It is the custom for all vessels to enter the docks. Vessels can discharge in the bay into lighters, but must always pay all dock dues and the expense of lighters extra. **Discharging:**—General merchandise and coke, 6s. 3d. per ton of 1,000 kilos. (or measurement ton on bulky goods); coal, 4s. 3d. per ton of 1,000 kilos.; lumber counts as general merchandise, and 25,000 ft. are considered as 60 tons. Coastwise cargo, discharging or loading, 3s. 5d. per ton. **Loading:**—Cargo for foreign ports, 3s. 5d. per ton. **Transshipment:**—3s. 8d. per ton. Discharging, loading, and transshipment charges on cargo are not for the ship's account. **Water:**—In dock, 3s. 5d. per ton; in the bay, 4s. per ton. **Ballast:**—5s. per Spanish ton of 2,028 lb., in the dock or in the bay. For tonnage, hospital, light and other dues, see **Peru**.

Pro Forma Charges on a ship of 769 reg. tons, with a cargo of general merchandise from Liverpool:—

	Sols.	c.
Anchorage dues	92	28
Hospital dues	30	72
Lighthouse dues	15	36
Custom House dues	153	80
Manifesting cargo and stamped paper	24	80
Gratuity to Custom House officer	10	00
" to donkey man and engine driver	9	00
Hatch survey	21	00
Ballast	1,122	88
Cables	26	10
Advances to 4 seamen	120	00
Shipping master's fees	40	00
Postages and petties	5	00
Use of rat guards	4	00
Accounts—butcher	414	60
" repairs	181	75
" water	32	85
" oil	6	00
Cash to captain	450	00
Sailing documents	20	00
Gratuity to the receiver of explosives	5	00

2,785 14 = £278 10s. 3d.

Pro Forma Charges on a ship of 1,628 reg. tons, with a cargo of coal from Australia:—

	Sols.	c.
Anchorage dues	195	36
Hospital dues	65	12
Lighthouse dues	32	56

Carried forward

293 04

Peru—Callao (*continued*).

	Sols.	c.
Brought forward	293	04
Custom House dues	325	60
Manifesting cargo and stamped paper	13	60
Ballast charges	1,786	40
Extra labour, 6 men 3 days	57	60
Use of 2 trucks and rat guards	20	50
Gratuity to Custom House officer	5	00
„ to donkeyman and engine driver	8	00
Extra labour charge	0	60
Advance to seamen	210	00
Shipping master's fees	70	00
Cable to Liverpool, 3 words	8	70
Stores	398	91
Lumber	373	45
Provisions	415	75
Butcher	149	80
Physician	15	00
Druggist	4	80
Cash to captain	670	00
Sailing licence	5	00
Custom House certificate	5	00
Captain of the port	5	00
Outward dispatch	25	00

4,866 75 = £486 13s. 6d.

Pro Forma Charges on a vessel of 2,363 reg. tons, with a cargo of coal from Australia —

	Sols.	c.
Anchorage dues	283	56
Hospital dues	94	52
Lighthouse dues	47	26
Custom House dues	472	60
Manifest—stamped paper	13	60
Ballast charges	2,679	60
Gratuity to Custom House officer	10	00
Advances to 15 seamen	500	00
Shipping master's fees	170	00
Cables to Liverpool (2), 6 words	17	40
Repairs	214	60
One boat	90	00
Druggist	82	70
Physician	30	00
Stores and water	472	75
Butcher	797	47
Boat hire	40	00
Towage, inwards and outwards	60	00
British Consulate	58	70
Cash to captain	1,510	00
Sailing documents	20	00
Postages and petties	25	00
Outward dispatch	25	00

7,714 76 = £771 9s. 6d.

Pro Forma Charges on a steamer 3,405 net reg. tons, discharging in the dock at Callao :—

	Sols.	c.
Lighthouse, 68 sols 20 c.; hospital, 136 sols 40 c.; port dues 409 sols 20 c.	613	80
Manifests and stamps, 13 sols 60 c.; stamp paper, 4 sols	17	60
Customs discharges, 15 sols; register, 5 sols	20	00
Boat	10	00
French Consul	30	00
Ecuador Consul	10	00
Measurement in harbour, 3 sols; cable to Havre, 16 sols 80 c.	19	80
Expenses, 3 sols; watching 20 c.	3	20
Correction of manifests, 3 sols; water as per invoice shute, 431 sols 80 c.	434	80
Laundry bill	21	00

Carried forward 1,180 20

Peru—Callao (*continued*).

	Sols.	c.
Brought forward	1,180	20
Gratuities to labourers, metal	13	00
Medicine	23	10
Payment by order of the captain; invoice Eagle Iron works	114	00
Labour	1,803	23
* Anchorage at customs	682	00
" for account of steamer for metals	7	00
Licence, 3 sols; harbour master, 5 sols; customs, 6 sols	14	00
Watcher	1	00

3,837 53 = £383 15s. 0d.

* This charge is not levied on a return visit to the port within six months.
If discharged in the bay the expenses are heavier.

CERRO AZUL.

Cerro Azul (or Canete) is in lat. 12°52' S., long. 76°28' W.

Exports.—Sugar and cotton.

Accommodation.—The anchorage is W.N.W. from the bluff that forms the cove, $\frac{3}{4}$ of a mile distant, in 7 fathoms. Nearer the shore the water is shallow, which causes a long swell. The landing place is on the N. side of Frayle Point, on a stony beach, where a heavy surf constantly breaks. A wooden pier, connected with the works of Quebraba and Casa Blanca, also affords facilities for landing.

CHERREPE.

Cherrepe is in lat. 7°8' S., long. 79°30' W.

Exports.—Sugar, rice, hides, and a small quantity of cotton and harcoal.

Accommodation.—It is an open roadstead. There is generally a well on the beach, and cargo is brought off in boats carrying about 5 tons trip. The only building in the place is a storehouse, which stands at the end of a small promontory.

CHIMBOTE.

Chimbote, in lat. 9°0' S., long. 78°39' W., is on the N.E. side of Ferrol Bay.

Population.—800.

Accommodation.—Anchorage in 8 to 10 fathoms. The swell is very moderate at all seasons. It sets in, with southerly wind, at about 0 a.m., subsiding at night. Cargo can be landed at all seasons at the provisional wooden pier, which is 150 yards long. Merchant vessels anchor in 7 to 8 fathoms, 3 cable-lengths off the pier.

There is no direct foreign commerce.

Vegetables are to be had at reasonable prices. Fresh beef, 12 c. per lb.; mutton, 12 c. per lb.; water, about 2 c. per gallon. Ballast, 1 sol 0 c. per ton, placed on board.

ETEN.

Eten is in lat. 7°0' S., long. 79°48' W.

Accommodation.—The anchorage, in 5 to 6 fathoms, about $\frac{1}{2}$ mile off shore, is quite exposed.

There is an iron pier here, 878 yds. long and 32 ft. wide, alongside which lighters and boats can easily load. A railway runs from the pier to Ferrenafe, 13 miles distant.

GUANAPE ISLANDS.

Guañape Islands, in lat. $8^{\circ}34'$ S., long. $78^{\circ}57'$ W., are about 8 miles from the mainland. The group consists of two islands, of about 2 miles in circumference each. The islands are under the jurisdiction of the port of Huanchaco.

Accommodation.—The shores are bold, with deep water close to, the anchorage being in 11 to 17 fathoms, under the lee of the islands. Vessels in ballast may throw it overboard on the anchorage ground. Vegetables are in abundance and can be obtained from the mainland.

Port Charges.—Port dues are paid in Callao, where vessels have to call for their licence. **Fresh Water** :—6 dols. to 9 dols per ton. **Beef** :—14 c. to 18 c. per lb.

HUACHO.

Huacho is in lat. $11^{\circ}8'$ S., long. $77^{\circ}40'$ W.

Exports.—Cotton and sugar.

Accommodation.—The anchorage is safe and good, in 5 to 9 fathoms. There is a wooden mole here for loading and discharging goods. Fresh provisions, fruit, and vegetables can be obtained at reasonable prices. Wood plentiful and water obtainable.

Pro Forma Charges on a vessel of 412 tons reg., from Callao in ballast, loading a full cargo of cotton seed ; draught of water, 16 ft. :—

	Dols. c.
Manifest and permit	4 40
Captain of the port	6 00
Clearance, etc.	50 00
	60 40 = £6 0s. 9d.

Tonnage dues had been paid at Callao.

ISLAY.

Islay is in lat. $16^{\circ}55'$ S., long. $72^{\circ}5'$ W.

This was formerly the port of Arequipa, but owing to the railway from Arequipa going to Mollendo Islay has been abandoned.

IQUITOS.

Iquitos is in lat. $3^{\circ}47'$ S., long. $73^{\circ}19'$ W., on the River Amazon, about 1,250 miles above Manaos.

Population.—About 12,000.

Export.—Rubber.

Accommodation.—Steamers drawing up to 23 ft. make monthly runs up to Iquitos. There is a floating mole here that all steamers are compelled to go alongside. The charges are 8s. per ton on all imports, and 4s on exports ; on the river traffic, 4s. per ton, loading and unloading.

Port Charges.—**Labour** :—5s. to 6s. per day. **Sand Ballast** :—Very expensive. **Sailing Licence** :—12s. **Doctor of Port** :—£1. **Captain of Port** :—£1 10s. **Manifest Fees** :—Heavy. **Loading and Discharging** :—About 1s. 9d. per ton. All steamers are compelled to go alongside a floating mole to discharge and load, the charges being 8s. per ton for import and 4s. per ton for export, paid by the shippers or consignees of cargo.

Peru—Iquitos (*continued*).**Pro Forma Charges** on a steamer of 1,826 tons net reg. :—

	Sols.	c.
Custom House charges	32	00
Captain of port	15	75
Brazilian Consul	66	30
Portuguese	10	50
French	10	80
British	7	75
Health officer	10	50
Translation of manifest	105	00
FRONTIER DUES.		
At Leticia, Peruvian frontier	10	50
At Capacete, Brazilian frontier	115	50

384 60 = £38 9s. 2d.

LOBOS ISLANDS.

Lobos Islands are in lat. 6°58' S., long. 80°45' W., about 10 miles from the mainland.

These islands are under the jurisdiction of the captain of the port of Iquitos. The prevailing winds are from S.E. to S.W. Great care should be exercised in approaching, as they are partially surrounded by rocks just below the water. There are extensive deposits of guano on the islands.

An excellent chart is published by the Peruvian Government.

MACABI ISLANDS.

Macabi Islands, in lat. 7°50' S., long. 79°28' W., are about 6½ miles S.W. of Malabrigo Head. They are about 60 miles N. of Guañape Islands, and about 8 miles from the mainland. The group consists of two islands, called the North and South. The North is the only one at present being worked.

Accommodation.—The best anchorage is on the north of the islands, from ½ a cable to 3 cables from the shore, in 9 to 18 fathoms on a sandy bottom. Ships coming from the S., and wishing to get to this anchorage, must come to the N.E. part of the island, and, when distant about a mile from the islands, steer N.W. until the opening between the islands is seen; then haul up under the North Island, have both anchors ready, and as soon as both islands are in one let go. It is best to keep to leeward where there are many other ships there.

The trade-winds blow regularly during the day from S. to S.S.E. During the night the wind blows from S.E. to E.S.E. Calms are scarcely known, there being always a light breeze. Fogs are very frequent, and very dense from December to April, and ships making for the island should not run their distance too fine, but haul up until the fog clears, which it generally does about midday. The islands are easily passed without being seen, and ships would have great difficulty in beating back, as a strong current sets dead against them.

The current runs at about 2 knots from the S.E. during the full and change. At other times it varies, being occasionally scarcely perceptible. In anchoring, ships should run out a stern mooring to prevent sheering about.

The barometer ranges from 30 in. to 30.20; the surface temperature 58°. The air at night and morning, 60°; at noon, 66°. A heavy dew falls every night, and the islands are generally enveloped in fog early in the morning.

MOLLENDO.

Mollendo, in lat. 17°1' S., long. 72°2' W., is the port of Arequipa, with which it is connected by railway.

Imports.—Cottons, woollens, linens, silks, clothing, hardware, furniture, sundries, provisions, wines, spirits, and medicines.

Exports.—Wool, bark, cow hides, ratania, borate of lime, silver and copper ores, and specie.

Accommodation.—Vessels anchor in 20 to 25 fathoms on good ground with a rocky bottom. Mollendo is exposed to westerly winds, but sheltered from N.E. and southerly winds. The currents are strong. There is 3½ fathoms within half a cable-length of the moles, of which there are two, with seven cranes capable of lifting 2 to 3 tons, and sheer legs capable of lifting up to 15 tons. The heavy swells prevalent from June to September prevent quick dispatch. A breakwater is now in course of construction which when completed will allow cargo to be discharged at the moles in bad weather.

Port Charges.—Tonnage Dues :—20 c. per ton reg. payable every six months. **Light Dues :—**2 c. per reg. ton. **Labour :—**2 dols. 50 c. to 3 dols. **Commission :—**On chartering, 2½ to 5 per cent. on amount of freight collecting freight, 2½ per cent. **Ballast :—**Sand, 1 dol. 85 c. per ton **Provisions :—**Beef, 20 to 25 c. per lb. **Water :—**A uniform charge of 5 dols is made for all the water any vessel requires.

Pro Forma Charges on a tramp steamer of 1,481 tons reg. discharging and loading cargo :—

	Dols.	c.
Tonnage dues, 1,481 tons at 20 c. per ton	296	20
Manifests and stamps	10	80
Sanitary visit	4	00
Opening and closing register and stamps	4	40
Stamp paper for dispatch	3	40
Dispatches	4	00
Crew list	1	00
British Consul, certificate of tonnage	2	50
„ bill of health, if required	5	00
Boat with dispatches, etc., per diem, 2 dols.	2	00
Register fee to Custom House and stamped paper	4	40
Agency	75	00

412 70 = £41 5s. 5d

Pro Forma Charges on a sailing vessel of 1,998 tons reg., with a cargo of coal, and leaving in ballast for a nitrate port :—

	Dols.	c.
Tonnage dues, 20 c. per ton	399	60
Manifests and stamps	10	80
Sanitary visit	4	00
Opening and closing register and stamps	4	40
Stamp paper for dispatch	3	40
Dispatch	4	00
Crew list	1	00
British Consul's fee, including bill of health	12	50
Mooring lighter	30	80
Ballast, 1,000 tons, at 1 dol. 35 c. per ton	1,350	00
Water duty	5	00
Agency	75	00
Revenue stamps	6	25

1,906 75 = £190 13s. 6d

Peru

PACASMAYO.

Pacasmayo is in lat. $7^{\circ}30'$ S., long. $79^{\circ}38'$ W.

Population.—2,500.

Exports.—Sugar, rice, hides, etc.

Accommodation.—Tolerably good roadstead. Anchorage in 5 to 6 fathoms, about $\frac{1}{2}$ a mile off shore. There is a pier with steam and hand cranes. Cargo is handled by launches of 15 to 50 tons capacity. There is a railway on the pier. Wood and fresh water can be had.

PAYTA.

Payta, in lat. $5^{\circ}10'$ S., long. $81^{\circ}5'$ W., is 500 miles N. of Callao, and 1,000 miles S. of Panama, and is connected by railroad with the town of Piura.

Population.—4,000.

Exports.—Cotton, Panama hats, bark, hides, orchilla, salt, goat-skins, guano and petroleum.

Accommodation.—This port is easy of access, safe, and deep enough to accommodate vessels of any draught, there being anchorage from 30 to 36 ft., two cable-lengths from the shore. The bottom is of mud, forming a tough holding ground. Inside the bay, the water is perfectly calm, but it is necessary to make a tack or two to reach the anchorage. In tacking, a ship can stand boldly in towards the shore, but a berth of about a mile should be given to the point on the starboard side of the entrance. In sailing N. care must be taken to make the land well to the S., as there is a strong N. current. There are no dangers 4 miles from shore, but as dense fogs prevail during some months, making it difficult to see the land at that distance, the lead ought to be used. Great delay would ensue should a vessel pass Payta. Seamen cannot be obtained here, and many vessels are detained having to wait until men are sent from Callao. Guano is discharged into large catamarans.

Pilotage.—Nil.

Port Charges.—There are no Light, Health, or Quay Dues. **Harbour Dues** :—20 c. silver per reg. ton. **Consular Fees** :—2s. 6d. **Bill of Health** :—Not compulsory; 5 dols. **Boat Hire** :—5 dols. to 10 dols. **Brokerage** :—75 dols. to 100 dols. **Labourage** :—1 sol 40 c. per day. **Ballast** :—1 sol silver per ton alongside. Municipal tax on ballast, 10 c. silver per reg. ton of ship. **Water** :—4 dols. per ton of 200 gallons, including rafting in tanks to the vessel. **Provisions** :—Ship chandlery of every description is very dear; sheep, 5 dols. each.

PISCO.

Pisco is in lat. $13^{\circ}43'$ S., long. $76^{\circ}13'$ W.

Population.—About 4 000.

Exports.—Cotton, wool, hides, and sugar.

Accommodation.—The best anchorage off the town is with the church open of the road, bearing E.N.E. $\frac{3}{4}$ E. in 4 fathoms, muddy bottom, a mile from the shore. There is a pier here extending 2,250 ft. into the sea. Landing may be effected, whatever may be the state of the sea, at the end of this pier, as it reaches beyond the point where the rollers commence.

Peru—Pisco (*continued*).

The lighthouse on the mole is visible 10 miles distant.

Pisco is connected by railway with Ica, the capital of the department. It is the port for the interior towns of Ayacucho and Huancavelica.

Port Charges.—Anchorage Dues :—20 c. silver per ton on vessels coming from foreign ports. No dues on vessels coming from other Peruvian ports. **Lighterage :—**3s. per ton. **Landing General Cargo :—**5s. 6d. per ton. **Ballast** can be procured from Paracas Peninsula, a distance of 6 miles at 10s. per ton if brought in lighters. If vessel goes close to take ballast the cost is about 2s. per ton.

Preserved and all kinds of fresh provisions and fruit can be had in abundance.

SALAVERRY.

Salaverry is in lat. 8°20' S., long. 78°55' W.

Population.—1,500.

Imports.—Merchandise of all kinds.

Exports.—Sugar, coca leaves, coffee, and cotton.

Accommodation.—The anchorage is in 5½ to 6 fathoms, ½ mile off shore, to leeward of the small point extending from the hill. Anchorage has an all sand bottom. There is an iron pier here extending into a depth of 4½ fathoms, affording safe landing at all times. Vessels do not come alongside the pier, as the cargo is landed in launches. There are twenty-four launches with a capacity of 600 tons total, size varying from 20 to 50 tons capacity each. Derricks and gear on the pier capable of lifting up to 1 tons weight. Railway connection with Truxillo. Telegraphic communication with all coast ports and foreign cables. Coal only received in bags, average discharge per day for sailing vessels, 50 tons in summer, 45 in winter, but it depends entirely on the ship's crew to increase the output. Agents can receive and unload at the pier an average of 70 tons per day. Provisions are scarce, prices moderate.

Port Charges.—Tonnage Dues :—5d. per reg. ton every 6 months.

Port Dues :—About £2. **Shipbroker :—**Entrance and clearing, £10 10s.

Ballast :—Sand, 5s. per ton, 1,000 kilos.; **Water :—**Scarce; 5 c. per gallon.

Meat :—25 c. per lb.

Pro Forma Charges on a steamer :—

	Sols of 24 pence.
Manifest and stamps	10 80
Anchorage dues (half-yearly) per ton reg.	00 20
Mooring launch, not generally necessary	40 00
Boat hire	10 00
Labour, per day without rations	3 50
Crew list	1 00
Sailing licence	7 40
Agency fee	50 00

122 90 = £12 5s.

Any other expenses depend on the captain, such as drugs, stores, money advanced, etc.

SAMANCO.

Samanco is in lat. 9°20' S., long. 78°30' W.

Imports.—General merchandise.

Peru—Samanco (*continued*).

Exports.—Sugar, metals, cattle, and maize.

Accommodation.—The Bay of Samanco, or Huambacho, is one of the largest and best on the coast of Peru, northward of Callao. The village of Samanco stands in the S.E. corner of the bay. Vessels and steamers usually anchor off the village, in from 4 to 6 fathoms of water, on a sandy bottom.

The mail steamers of the Pacific Steam Navigation and South American Steamship Companies call here alternately each week, both going north and coming south.

There are no pilots, but strangers can go in boldly, as there are no hidden dangers.

Vessels enter at Callao

Port Charges.—**Customs Officer** :—5 dols. **Labour** :—2 sols 50 c. to 3 sols per day. **Provisions** :—Potatoes, pumpkins, fowls, eggs, and vegetables can be obtained from the neighbouring villages at fair prices. Sheep and pigs are easily obtained, beef being more scarce. Masters are recommended to purchase live stock and kill on board, as being more economical. Flour can be purchased at from 16s. to 18s. per 100 lb. bag. **Water** :—Fresh water is scarce and brackish at the mouth of the River Nepena, which discharges into the bay, but at a distance of one mile inland the water obtained is plentiful and fair.

SAN JOSÉ DE LAMBAYEQUE.

San José de Lambayeque, in lat. $6^{\circ}45'$ S., long $79^{\circ}58'$ W., is no longer a port of entry. The anchorage, in about 6 fathoms, is $1\frac{1}{4}$ miles from the shore, and is said to be the worst in Peru. The bottom is hard sand, forming bad holding ground. Two anchors are necessary.

YLO ROAD.

Ylo Road is in lat. $17^{\circ}32'$ S., long. $71^{\circ}24'$ W.

Exports.—Guano, copper, and wine.

Accommodation.—The best anchorage is in Pacocha roadstead, about a mile south, in 14 fathoms, and the best landing at the mole.

URUGUAY.

The Republic of Uruguay lies on the eastern bank of the River Uruguay, having the Atlantic Ocean as its eastern boundary, with the Republic of Brazil to the north. It has an area of 72,210 square miles, with a population estimated at about $1\frac{1}{4}$ millions. The total over-sea trade of the Republic amounts to about $14\frac{1}{2}$ million pounds sterling, the imports for the fiscal year 1906-7 being returned at £7,330,833, and the exports at £7,114,444. The principal items of import are food-stuffs, raw and manufactured materials, soft goods, and general merchandise, whilst the exports consist almost entirely of animal products.

The commercial navy of Uruguay at the end of 1907 consisted of 43 steamers, of a total net tonnage of 24,368 tons, and 184 sailing vessels of a total net tonnage of 20,620 tons. The River Uruguay affords the principal means of communication, whilst railways of a total length of nearly 1,300 miles link up the ports with the chief centres of commerce.

A post, telegraph, and telephone service has been established.

Currency, Weights and Measures.—Theoretically, the monetary standard is a gold one, but so far no gold coins have been put into circulation. Accounts are kept in dollars and cents, 1 dollar = 4s. 2d.; 4.80 dols. = £1. The metric system of weights and measures has been adopted throughout the Republic.

Lighthouse Dues.—All the lighthouses of the Republic are now in the hands of the Government, as the private concessions of those of Punta Brava, Pancla, Farallon, and José Ignacio have expired. Light dues have been reduced from 5d. to $1\frac{1}{2}$ d. per ton reg., and in case of ships carrying only passengers, to less than 1d. per ton, and the whole scheme of lighthouse reform and improvement is being taken into careful consideration. A siren is to be erected at Lobos Island Lighthouse.

A Proposed Free Zone.—A Bill has been recently before the Chambers providing for the establishment of a free zone on the fiscal lands reclaimed from the sea on the east of the Bay of Montevideo. The Bill provides, *inter alia*, for the storage, exempt from all duties, and rent free for two years, of all foreign merchandise. All operations connected with the handling of goods are to be permitted in the zone, and these can be exported at any time on paying the Custom House duties, or free of duty if dispatched in transit. It provides for the sale within the free zone of articles of consumption for vessels not exclusively engaged in local traffic, and authorizes the State to establish free zones on similar lines in other ports of the Republic. The Bill has been well received, but the process of passing it into law will no doubt, be slow.

COLONIA DEL SACRAMENTO.

Colonia del Sacramento is situated in lat. $34^{\circ}25'$ S., long. $57^{\circ}45'$ W., on the N. side of the River Plate, 15 miles across from Buenos Aires, and 6 miles from Montevideo.

Uruguay.

Population.—8,800.

Exports.—Cattle and sheep.

Accommodation.—The port is formed by a bay, and is protected by several islands at and near the entrance. The maximum draught of water for vessels making use of this port is 16 ft. There are two small piers ; also a dry dock capable of receiving vessels of 1,000 tons. It is attached to the Marine Railway, which extends 650 ft. into the water. Repairs can be effected here. There is telegraphic communication between Colonia, Montevideo, and Buenos Aires, and powerful tugboats, belonging to the South American Navigation and Marine Railway Company, are ready at all times to proceed to either port and tow vessels here.

Port Charges.—Vessels putting in for repairs are exempt from all government dues and charges.

MALDONADO.

Maldonado, in lat. $34^{\circ}54'$ S., long. $54^{\circ}52'$ W., is situated on the N. bank of the Rio de la Plata.

Population.—6,000.

Exports.—Hides and cattle.

Accommodation.—The port is formed by a bay, at the mouth of which is an island, giving protection to shipping, and forming two entrances to the port. Vessels of any draught can lie in the bay and be loaded or discharged by lighters. The best anchorage is in $5\frac{1}{2}$ fathoms, about half a mile off shore. The bay is exposed to S.W. winds. Fresh water, beef, and vegetables can be obtained at moderate prices.

MONTEVIDEO.

Montevideo is in lat. $34^{\circ}53'$ S., long. $56^{\circ}10'$ W.

Population.—316,000.

Imports.—Cotton and woollen fabrics, hardware, boots and shoes, wine, tin, rice, sugar, salt, coal, lumber, silks, etc.

Exports.—Wool, hides, sheep skins, tallow, grease, horse hair, beef, bones, bone ash, horns, wheat, maize, etc.

Accommodation.—The harbour has a depth of 20 to 30 ft. ; mud bottom. The anchorage for large vessels not wishing to enter the harbour is about 2 miles S. of San José Point, in 22 ft. of water. Vessels may anchor further in as convenient, or in the harbour proper, in 20 to 30 ft. This port is said to be the best one on the Rio de la Plata, and is well protected from southerly gales by two breakwaters running at right angles to each other.

Vessels which can depend on their anchors and cables may anchor safely in the road, in the same depth of water as they draw provided the river is at a mean height ; for whenever the wind sets in from the S. the water rises sufficiently, and the bottom being soft mud, 3 ft. more than the vessel's draught is amply sufficient to ride out the heaviest gale without injury.

The following are the dimensions of the dry docks and slip :—

Uruguay—Montevideo (*continued*).

Dock.	Length over all in feet.	Width of Entrance at high water springs level in feet.	Depth on the Sill at high springs in feet.
Lobos Point (Cibil's)	470	55	16 to 19
Maná Gabriel Point	271	50	12 to 13
Patent Slip	100 (cradle)	{ Lifting power, 400 tons	Forward 10 } Aft . . 10 } on blocks

Cibil's dock can be divided into two sections, 255 ft. and 195 ft. long.

Vessels of all classes can enter the port at any hour of the day or night but must not communicate with the shore before receiving the visit of the health officer, which takes place between sunrise and sunset. There are two cranes to lift from 2 to 4 tons each.

Port Regulations.—All vessels calling here for any purpose whatever should bring a bill of health, etc., visé by the Uruguayan Consul at the port of departure, and at each port of call. Should there be no Uruguayan Consul at port of departure or at any port of call, then a bill of health from the authorities there is sufficient; and should a vessel put in here in distress, no fine will be inflicted for want of the visé bills of health.

The rule of this port is, that all vessels, after entering at the Customs and obtaining the necessary permits, are allowed to discharge ^{and} or load from sunrise to sunset every day; but steamers can and generally do apply for, and obtain packet privileges, which cost about 22 dols. for the necessary stamp paper, and these privileges not only enable them to commence to discharge ^{and} or load immediately the health visit is passed, but also to work night and day, Sundays and holidays included, and to leave the port at any hour, and without settling up and clearing at the Customs, which otherwise would be necessary, the agent or consignee remaining responsible to do this after departure. All expenses incurred upon cargo before it leaves the steamer's deck are for vessel's account, such as labour, stevedore, etc., and all expenses attached thereto after it leaves the vessel's deck are for account of the consignee of the cargo, such as lighterage, wharfage, storing, etc., but as the Customs hold the steamer and agents responsible for the true and correct delivery of the cargo to the Customs dépôt according to what may be manifested, it is the rule of the port that the agent employs a trustworthy lighterman to discharge all the cargo, thus also avoiding the confusion, delays, and difficulties which would ensue if each consignee of cargo sent off his own lighterman for his respective cargo; and although the lighterman is thus employed or selected by the agent of the vessel, it is for account of the consignees of the cargo, and it is from them that the lighterman collects the cost of lighterage. Lighters, labourers, stevedores, etc., are always plentiful, and no delay need be anticipated for lack of these, and the rapidity of discharge depends upon the facilities a vessel may have for the purpose. There is also ample accommodation in the Customs dépôts for large quantities of merchandise, consequently there is no delay in discharging from lighters to shore. Outward cargo is put alongside in lighters at the shipper's expense, but the steamer has to supply winches and labour for receiving and stowing it on board, giving a receipt for same as each lot comes on board. Labour and material for repairs are very dear. Ship masters discharging salt should look carefully after the lightermen. Water and ships' supplies are abundant.

Uruguay—Montevideo (continued).

Pilotage.—Steamers and sailing vessels discharging or loading full cargo must enter the inner roads and pay port pilotage. Vessels discharging or loading part cargo can effect these operations in the Outer Roads, thus avoiding pilotage. It is not compulsory for vessels to employ a sea pilot, but should one be taken it is recommended that a written agreement as to price be made before engaging him, as otherwise the full tariff rate of 5 dols. per foot draught will be incurred.

Port Charges.—Light Dues :—On vessels over 400 tons reg.—Vessels with cargo and passengers, 3 c. per reg. ton. **Towage :**—Sailing vessels, inwards, 3 c. per reg. ton; outwards, 3 c. per reg. ton; for each shift, 2 c. per reg. ton. **Clearance Dues :**—10 dols. **Bill of Health :**—4 dols. **Custom House Notary :**—Sailing vessels, inward manifest, 3 dols. 20 c.; outward manifest, 4 dols. 80 c.; ballast certificate, 1 dol. 60 c.; steamers outward manifest, 1 dol. 60 c. **Steam Launch :**—6 to 8 dols. for each trip. **Stamped Papers :**—Opening register for discharge, 5 dols.; closing register of discharge, 5 dols.; requesting visit on completing discharge (sailing vessels only), 25 c.; opening register for loading, 5 dols.; closing register of loading, 5 dols.; inward manifest, 1st sheet, 5 dols.; following sheet, 25 c.; outward manifest, 5 dols.; ballast certificate, (sailing vessel), 50 c.; requesting visit when ready to leave, 25 c.; permit to store inward cargo, 50 c. each sheet; certificate of outward cargo, 50 c. Vessels between 300 and 400 tons reg. pay for stamped paper 4 dols. in all cases when vessels of more than 400 tons reg. pay 5 dols.; vessels between 300 and 200 tons reg. pay 3 dols.; between 200 and 100 tons reg., 2 dols.; less than 100 tons reg., 1 dol.

Lighterage.—The new port not being yet completed, the loading and discharging of vessels is carried on by means of lighters in the bay and anteport at the risk and expense of consignees and shippers of cargo respectively, according to the following tariff :—

Discharging.

	Outer Bay.		Inner Bay.	
	Dols.	c.	Dols.	c.
Per ton of 40 cubic ft. or 20 cwt., general cargo	1	40	1	00
„ „ 1,000 kilos., general cargo	1	40	1	00
„ „ cubic metre	1	10	0	80
Timber, per 1,000 sup. ft.	1	00	to 1	80

Besides the above, there are special tariffs for other articles.

Loading.

	Outer Bay.		Inner Bay.	
	Dols.	c.	Dols.	c.
Wheat or maize, per 1,000 kilos.	0	60	0	50
Bales of wool, hair, and sheepskins, each	0	50	0	40
„ „ jerked beef, each	0	06	0	05
Pipes of tallow	0	60	0	40
Salted ox and cow hides, per 1,000	30	00	20	00
„ „ horse hides, per 1,000	20	00	15	00
Dry ox and cow hides, per 1,000	18	00	12	00
„ „ horse hides, per 1,000	15	00	10	00
„ „ Paraguayan hides, per 1,000	20	00	14	00
Horns, per 1,000	1	40	1	00
Bones, camp and burnt, or bone ash, per ton	1	00	0	70

Stevedoring.—The majority of owners and agents have special contracts with stevedores. The following may be taken as the ruling rates :—

Uruguay—Montevideo (*continued*).*Discharging.*

	Steam. Dols. c.	Sail. Dols. c.
General merchandise, per ton weight or measurement	0 19	0 28
Coal, per ton	0 19	0 28
Salt or cement, per ton	0 18	0 27
Iron girders	0 20	—
Pitch pine or spruce, per 1,000 superficial ft.	0 65	0 65
White " " " "	0 45	0 45

Loading.

	Steam. Dols. c.	Sail. Dols. c.
General merchandise, per ton weight or measurement	0 18	0 23
Bales of wool, per bale	0 18	0 23
Cereals, per 2,240 lb.	0 18	0 23
Bales of hay or fodder, per 40 cubic ft.	0 16	0 22
Flour per 2,240 lb.	0 18	0 23
Bran " 40 cubic ft.	0 16	0 21
Jerked beef " bale	0 18	0 23
Tallow " pipe	0 20	0 25
" " half-pipe	0 10	0 12
Dry hides " 1,000	6 50	8 00
Salted hides " 1,000 including salt	—	6 50
Bones " 1,000	0 45	0 50
Bone ash " 2,240 lb.	0 18	0 23
Horns and horn piths, per 1,000	0 45	0 50
Cattle or horses, per head	0 50	—
Calves " "	0 30	—
Sheep " "	0 10	—
Shifting coal " 2,240 lb.	0 25	—

Consular Fees:—According to nationality, tonnage, and destination. Argentine consular fees:—Vessels over 1,000 tons, clearing in ballast for an Argentine port, 14 dols. 94 c.; under 1,000 tons reg., 10 dols. 26 c. for visé on bill of health, crew-list, and ballast certificate. Vessels calling here in any of the following circumstances are free of stamp and light dues, and may remain in port for an indefinite time—If arriving in distress, calling for orders, to change crew, for provisions, to seek freight, for repairs, for bunkers, to take or land pilots, finishing voyage here and leaving for port of origin or ports between.

Water:—Pumped into ship's tanks, 2 dols. gold per ton. **Ballast:**—Delivered alongside, stone, 1 dol. 60 c.; sand, 80 c. to 1 dol. gold per ton.

Provisions:—Fresh beef, 5d. per lb. Vegetables, 1½d. per lb. **Coal:**—About 100,000 tons of coal are kept in stock, and about 1,000 tons per day can be put on board by means of lighters and tugs, or 1,500 tons if working also at night.

Pro Forma Charges on a steamer of 1,200 tons net reg. from a foreign port, discharging full cargo and loading full cargo for a foreign port:—

	Uruguayan Gold. Dols. c.
Port pilotage, inwards	10 00
Light " outwards	10 00
Light dues	36 00
Stamped documents. Opening register for discharge	5 00
" " Closing register of discharge	5 00
" " Opening register for loading	5 00
" " Closing register of loading	5 00
" " Inward manifest (9 sheets)	7 00
" " Outward manifest	5 00
" " Requesting visit when ready to leave	0 25
" " Certificate of outward cargo	0 50
Custom House notary for outward manifest	1 60
Carried forward	90 35

Uruguay—Montevideo (continued)

	Uruguayan Gold	
	Dols.	c.
Brought forward	90	35
Clearance dues	10	00
Bill of health	4	00
Stevedore, discharging 2,500 tons general merchandise	475	00
„ loading 2,000 tons flour	360	00
„ „ 500 bales wool	90	00
	1,029	35 = £214 8s. 11d.

PORT SAUCE.

Port Sauce, on the River Plate, is in lat. $34^{\circ}30'$ S., long. $57^{\circ}30'$ W., and opposite La Plata, which is 45 miles distant.

Accommodation.—The entrance channel from the River Plate has been dredged to a depth of 21 ft. at low water, and is $1\frac{1}{2}$ miles long. There is a total length of quayage of 6,000 ft., with a depth alongside of 21 ft. at low water, and 25 ft. at high water. The water area of the port is 42 acres. Port Sauce is connected by railway with Montevideo, a distance of 125 miles. The docking accommodation, etc., is the property of the Uruguay Western Railway Company. There is a depth of 20 ft. at the mole, inside the breakwater, at ordinary low water, and there is room for three ocean-going steamers and several coasting vessels to load alongside at the same time. The railway comes on the mole, alongside the vessels, which can load wheat at the rate of 1,200 tons in ten hours.

Port Charges.—Ocean - going steamers or sailing vessels, with cargo or calling for orders, 6 c. per ton. Coasting steamers or vessels, 5 c. per ton. Any steamer or sailing vessel on demurrage in the port, not loading or discharging, 2 c. per ton per day. Vessels alongside the mole, but not effecting operations, 2 c. per ton per day. **Mole Dues** :—Ocean steamers or sailing vessels, 25 c. per ton. Coasting steamers or vessels, 10 c. per ton. Vessels alongside the mole, not loading or discharging, 10 c. per ton per day. **Loading and Discharging Dues** :—Ocean steamers or sailing vessels, 50 c. per ton. Coasting steamers or vessels, 60 c. per ton. **Traction Dues (Mole)** :—Ocean steamers or sailing vessels, 20 c. per ton. Coasting steamers or vessels, 60 c. per ton. **Light and Harbour Improvement Dues** :—Ocean steamers and sailing vessels, 14 c. per ton. Vessels not loading or discharging, 8 c. per ton. Coasting steamers or vessels, 3 c. per ton. Any steamers or vessels on demurrage in the port, and not loading or discharging, 4 c. per ton per day. Vessels alongside the mole, not loading or discharging, 4 c. per ton per day. **Towage** :—For foreign vessels of call who have no cargo operations, 3 c. per ton. Dock towage; ocean-going sailing vessels, 5 c. per ton. **Ballast** :—Sand, 85 c. per ton of 1,000 kilos. (including all dues). Granite, in pieces of from 10 to 2,000 kilos., 98 c. per ton (all dues included). **Water** :—Filtered, 5 c. per 1,000 litres, put into ship's tanks.

The charges quoted are Uruguayan gold dollars.

THE URUGUAY RIVER.

The Uruguay is navigable for vessels of about 12 ft. draught as far as Salto, and for small steamers beyond it. For practical purposes, however, it may be said that the river as a navigable waterway ends at Salto, just

Uruguay—The Uruguay River (*continued*).

beyond which a chain of rocks prevents the passage of any but the smallest flat-bottomed boats. The river is buoyed with luminous buoys from Martin Garcia to above Paysandu, a distance of almost 200 miles. The navigation of the river is easy, as the current is not particularly strong; the channel is straight and there are but few banks. It is subject to periodical rises, occasioned by the great rains during the spring months in the Brazilian provinces, whence it takes its source. The prevailing winds are from the northward; they generally follow the course of the river.

The only ports of importance, so far as ocean-going steamers are concerned, are Fray Bentos, which serves as the port for Gualeguaychú, and Paysandu.

FRAY BENTOS.

Fray Bentos, in lat. 33°15' S., long. 58°10' W., is the capital of the Department of Rio Negro.

Population.—About 5,000.

Accommodation.—Vessels drawing not more than 20 ft. can pass the bar at Martin Garcia, even with a low river, and the navigation up to Fray Bentos is not now difficult, the Canal Ingles having been dredged. With a good pilot no danger need be apprehended.

The Liebig Company's works are at Fray Bentos, about a mile and a half below the town, and vessels drawing 18 to 20 ft. come alongside the wharves of the factory to discharge.

Pilotage.—From Monte Video, 80 dols. to 150 dols., according to tonnage.

Port Charges.—**Port Dues**:—Vessels of 400 tons and over, inwards with cargo, 20 to 25 dols.; in ballast, 4 dols.; outward with cargo, 25 to 30 dols.; in ballast, 10 dols. **Consular Fees**:—5 dols. to 30 dols., according to country of destination. **Light Dues**:—3 c. per ton. **Ballast**:—Sand, 1 dol. 20 c. per ton, put on board. **Stevedoring**:—Stowage of salted hides, 8 dols. per 1,000; pipes, 15 c.; hogsheads, 10 c.; cases, 5 c.; bales, 20 c.; bags guano, 1 c.; **Brokerage**:—2½ per cent. address commission on freight. **Provisions**:—Fresh meat, 5 c. per lb. Vegetables, milk, etc., generally fairly cheap.

Pro Forma Charges on a Norwegian schooner of 371 tons reg. (550 tons d.w.), from Liverpool, leaving with a cargo of tallow for St. Petersburg:—

	Dols.	c.
Stevedore, 722 pipes tallow at 15 c.	108	30
„ 297 hhds. tallow at 10 c.	29	70
Light dues, 371 tons at 3 c. per ton	11	13
Customs for dispatch	9	20
Custom House stamps:—		
Entering, 50 c.; clearing, 50 c.; opening reg., 4 dols. 25 c.; closing reg., 4 dols. 25 c.; discharging, 4 dols. 25 c.; loading, 4 dols. 25 c.; outward and homeward manifest, 8 dols. 50 c.; permits, 1 dol. 50 c.; certificates, 2 dols. 50 c.; bill of health, 4 dols.; muster roll (crew), 25 c.; store list, 25 c.	35	00

193 33=£40 5s. 7d

Pro Forma Charges on a steamer of 789 tons reg., from Cardiff and leaving for Colon and Europe:—

Uruguay—Fray Bentos (continued).

	Dols.	c.
Light dues, 789 tons at 3 c. per ton	23	67
Customs charge for dispatch to Colon	7	20
Argentine Vice-Consul for dispatch	30	75
Customs for dispatch to Europe	8	40
Custom House stamps :—		
Outward to Fray Bentos :—		
Visit, 50 c. ; opening reg., 5 dols. 25 c. ; discharging, 5 dols. 25 c. ; manifest, 5 dols. 25 c. ; permit, 3 dols. ; store list, 25 c.	19	50
Outward, Fray Bentos to Colon :—		
Manifest, 5 dols. 50 c. ; closing reg., 5 dols. 25 c. ; bill of health, 4 dols. ; muster roll, 25 c. ; clearance 50 c.	15	50
Homeward, Colon to Fray Bentos and Europe :—		
Entrance, 50 c. ; opening reg, 5 dols. 25 c. ; manifest in transit, 75 c. ; loading, 5 dols. 25 c. ; permits, 2 dols. 50 c. ; manifest, 5 dols. 80 c. ; certificate, 1 dol. 50 c. ; closing reg., 5 dols. 25 c. ; bill of health, 4 dols. ; muster roll, 25 c. ; clearance, 50 c. ; store list, 25 c.	31	80
Stevedore, 1,756 tons at 1s. per ton, £87 16s.	412	66
	549	48 = 114 9 6
		£ s. d.

PAYSANDU.

Paysandu is in lat. 32°19' S., long. 58°0' W.

Population.—20,000.

Imports.—Lumber, coal, and salt.

Exports.—Wheat, maize, linseed, salted hides, tallow, jerked beef, bone ash, bones, hard woods, hay in bales, wool and hair in bales, etc.

Accommodation.—Paysandu is the second most important town in the Uruguayan Republic, and is the last port on the river available for ocean-going steamers and sailers. Vessels must anchor here to load from the following saladeros :—Old Cuareim, New Cuareim, Harriague, La Conserva, Concordia, Colon, Freitas, Nuevo Paysandu, Casa Blanca, and Her-yidero. Vessels drawing 15 to 16 ft. can cross the Almiron bar and come up here with a low river. With a strong south wind the river rises 3 to 4 ft. in a few hours.

There is almost a daily service of river steamers between Montevideo, Buenos Aires, and the ports of Concordia on the Argentine side and Salto on the Uruguay side of the river. During certain months of the year, small steamers run up the river as high as Uruguayana, and even Santo Tome or Garruchos, but this traffic is of little importance.

Pilotage.—From Paysandu to Montevideo, 65 dols. to 140 dols., according to the size and draught of the vessel.

Port Charges.—**Port Dues** :—Vessels up to 200 tons reg., 6 dols. ; above 200 tons reg., 15 dols. **Light Dues** :—3 c. per reg. ton. **Bill of Health** :—4 dols. **Manifest Dues** :—8 dols. **Lighterage** :—To or from Almiron, 60 c. per ton ; to or from Banco Grande, 80 c. per ton. **Ballast** :—Sand and earth, 1 dol per ton. **Stevedore** :—7 dols. per 1,000 ox hides ; 30 c. per pipe of tallow ; 1 dol. per 1,000 horns ; and the same per ton of bones. Labour high. **Provisions** :—Ship's supplies, with the exception of beef, flour, and potatoes, are also very dear.

ROMAN.

Roman is in lat. 32°52' S., long. 58°0' W. This place is now of no interest to shippers.

VENEZUELA.

The Republic of Venezuela consists of a federal district, thirteen states, and five territories. It has an area of about 364,000 square miles, and a population, according to the census taken in 1907, of 2,646,835. The President, assisted by a Cabinet of Ministers, holds the executive power; the legislative authority being vested in a Congress consisting of the Senate and the Chamber of Deputies. The separate states of the federation manage their own internal affairs. The territories are administered by the President.

Commerce.—The Customs tariff is arranged on a revenue producing basis, and amounts on average to 40 per cent. of the value of the goods imported. The coasting trade is forbidden to foreigners. So many regular steamship lines now call at Venezuelan ports that full cargoes are rarely obtained. Sailing ships never call “seeking.”

Mercantile Marine.—The latest returns available show twelve steamers and eighteen sailing vessels sailing under the Venezuelan flag.

Internal Communications.—The country is opened up by twelve lines of railway, four of which are national and eight foreign, these having a total length of 540 miles. There is also about 11,160 miles of river water open for navigation. The roads of the country are poorly constructed and ill kept; merchandise in districts not served by the railways or river is conveyed in small mule carts or by pack animals.

Currency, Weights and Measures.—The currency is based on the bolivar (4 bolivars=1 Macququina dollar); 25.25 bolivars=£1. Fractional coins are the *real*, value 5*d.*; and the *medio* (2 medios=1 real). The only legal weights and measures are those of the metric system.

Customs Regulations.—Every shipmaster arriving in the ports of the Republic is required, under certain penalties, to deposit in the local Custom House the following documents:—

(1) The manifest of the cargo, expressing the name of the ship and captain; her class, tonnage and flag; the port from whence she cleared; the number, marks, description, and quality of the goods on board; the port for which they are destined; the names of the consignees, in conformity with the bills of lading.

(2) Two closed and sealed envelopes containing two sets of original invoices of the cargo, certified by the Venezuelan Consul, each consignee being bound to present another copy, similarly certified, when he enters the goods.

Exporters must therefore present at the office of the Venezuelan Consul at the port of embarkation, three invoices of each parcel of goods, expressing their quantity, class, number, weight, measure, and true value, to be by him duly certified. Two copies to be retained by him, and sent by the ship, and the other returned to the exporter, under seal for presentation on the ship's arrival out, as above stated.

Two copies of the manifest have also to be presented to the Consul.

The discharging in all ports of Venezuela is regulated by the law, which requires the cargo for each port to be taken out of the ship within five days, however large the quantity be.

Venezuela.

The cargoes are discharged and loaded at the expense and risk of the merchants. Every vessel is required to pay the water dues of 25 c. ($\frac{1}{4}$ Macq. dol.) per ton reg., whether water is taken or not, but only once if several ports are touched at. The vessel is in most cases measured by the harbour master, and the result nearly always corresponds with the international register.

The tonnage dues have been abolished.

On February 19, 1908, a decree was promulgated, ordering all ship-masters arriving from a foreign port to deposit with the Customs authorities, at the first port of entry, their clearance papers from their original port of departure, showing the names of each member of the crew, and ordering that no other person should be considered a member of the crew unless it could be shown that he had only been taken aboard to fill the place of some officer or seaman who had been left behind. The fine for any contravention of this regulation is fixed at 2,000 bolivars.

Emigration and Immigration.—The fact that the population of Venezuela is only a little over $2\frac{1}{2}$ millions has made it unnecessary for the legislature to pass any enactments so far as emigration from the Republic is concerned, nor is there any likelihood of any such regulations being passed for some time to come. As regards immigration, there are certain regulations in force prohibiting the entry of undesirable persons; the only point in these regulations which seems to affect shipowners is that the authorities insist on each immigrant being in possession of a certificate of vaccinations and a declaration of the baggage carried (estimated weight of), duly legalised by a Venezuelan Consular representative. It is also advisable that each new-comer should be provided with a passport, and shipping companies would be well advised to insist on this.

BARCELONA.

Barcelona is in lat. $10^{\circ}5' N.$, long. $64^{\circ}45' W.$ See **Guanta**.

CARUPANO.

Carupano, in lat. $10^{\circ}35' N.$, long. $63^{\circ}14' W.$, stands at the mouth of two small rivers.

Population.—About 12,000.

Imports.—Manufactured goods.

Exports.—Cocoa, coffee, leather, balata, timber, hides, etc.

Accommodation.—The roadstead is quite open and exposed. There is $2\frac{1}{2}$ fathoms of water about 5 cable-lengths from the town.

Provisions are scarce and dear.

Pro Forma Charges on a vessel of 100 tons reg., with general cargo from Hamburg :—

	Bols.	c.
Harbour master	12	50
Doctor	12	50
Interpreter	70	00
Water dues	39	60
Stamp paper, etc.	11	50

146 10 = £5 15s. 9d.

Venezuela.

CIUDAD BOLIVAR.

Ciudad Bolivar, in lat. $8^{\circ}9' N.$, long. $63^{\circ}59' W.$, is situated about 250 miles from the mouth of the Orinoco River. Climate healthy.

Population.—14,000.

Imports.—Manufactured goods of all kinds.

Exports.—Tobacco, coffee, cattle, gold, hides, tonquin beans, deer and goat skins, etc.

Accommodation.—During the months of August, September, and sometimes part of October, the Orinoco River is at its highest, and large vessels can discharge alongside the quays. In February, March, and April the river is at its lowest, and vessels drawing over 11 ft. have to discharge into flat-bottom steamers some way down the river. The bar at the mouth of the Orinoco has a depth of $16\frac{1}{2}$ ft. When the river is high vessels are able to come alongside the quays at Ciudad Bolivar and discharge, but when the river is low the cargo has to be carried from the brink of the river to the Custom House.

Mean rise of tides, 12 ft.; during the rainy season, April to September, about 40 ft. During this season it is impracticable to sail up the river.

Barrancas is a town on the river bank, halfway between its mouth and Ciudad Bolivar.

The lighthouse, formerly situated at the Boca Grande of the Orinoco River on the lightship, lat. $8^{\circ}36' N.$, and long. $60^{\circ}42' W.$, Greenwich meridian, has been removed, and a new one has been erected at Barima Point, near by, in the said Boca, viz., lat. $8^{\circ}36'10'' N.$, long. $60^{\circ}26'10'' W.$, Greenwich meridian.

The lighthouse is visible at a distance of 18 miles.

The river pilots are stationed at Cangrejo or Crab Island, the first island on the starboard side after entering the river.

Port Charges.—**Entrance Fees** :—37 bols. 50 c. **Clearance Fees** :—10 bols. **Consular Fees** :—13 bols. **Ballast** :—8 bols. per ton. **Labour** :—10 bols. per day. **Stevedores** :—20 bols.

CORO.

Coro is in lat. $11^{\circ}18' N.$, long. $69^{\circ}45' W.$

Population.—About 11,000.

Exports.—Mules, goats, skins, hides, cheese, and pottery.

Accommodation.—This port can only be reached by coasters, and is situated at the head of the Gulf of Coro. At La Vela de Coro, about 6 miles distant, but on the other side of the neck of land joining the peninsula of Paraguana, there is good anchorage, the water gradually shoaling from 15 to 3 fathoms close to the shore.

Fresh water is scarce and dear.

CUMANA.

Cumana is in lat. $10^{\circ}18' N.$, long. $64^{\circ}7' W.$ Climate healthy.

Population.—About 12,000.

Exports.—Mules, cattle, smoked meat, salted fish, and cocoa.

Accommodation.—The harbour is situated in the Gulf of Cariaco,

Venezuela—Cumana (continued.)

and is considered one of the best on this coast. The town of Cumana is situated on the south point of the entrance into the gulf. The anchorage is in about 12 fathoms, 2 or 3 cable-lengths from the shore.

Fish and wild fowl are very cheap.

The port charges on a vessel of 163 tons reg., from Hamburg, discharging about one-third of her cargo, amounted to about £4.

GUANTA.

Guanta is in lat. $10^{\circ}7' N.$, long. $64^{\circ}36' W.$

Accommodation.—There is safe anchorage for the largest vessels. There is a fine wharf here alongside which vessels of the largest size can moor, and load and discharge their cargoes. There is 29 ft. of water at the wharf at low water.

A stationary red light has been placed on the end of the wharf, and a stationary white light on a small rock close to the entrance to the harbour.

Pilotage.—Not compulsory. There are no licensed pilots. On blowing the whistle three times the Custom House send off a boat, the charge for same being 50 bols.

Port Charges.—**Loading Permit** :—1 bol. **Outward Clearance** :—1 bol. **Wharfage and Quay Dues** :—5 c. per reg. ton. Wharfage dues on cargo landed or discharged, 10 c. per 100 kilos. **Harbour Master** :—12 bols. 50 c. **Sanitary Inspector** :—12 bols. 50 c.

This port has taken the place of Barcelona (with which it is connected by railway 18 miles long), which is nearly closed to traffic by sandbanks.

LA GUAYRA.

La Guayra, in lat. $10^{\circ}28' N.$, long. $66^{\circ}55' W.$, is the principal seaport of Venezuela.

Population.—10,000.

Imports.—Dry goods, provisions, coal, and timber.

Exports.—Coffee, cocoa, hides, skins, timber, cocoanuts, cattle, copper ore, caoutchouc, and copaiva.

Accommodation.—There is a breakwater 680 yards long, enclosing an area of sheltered water of about 90 acres, with an average depth of 28 ft. Steamers moor at three piers projecting from this breakwater; the first is 260 ft. long, with 42 ft. water alongside; the middle one is 240 ft. long, with 24 to 30 ft. water; and the inner pier is 220 ft. long, with 20 to 27 ft. water. The piers are covered in by sheds, and the rails are laid into these sheds, so that vessels can load and discharge direct into railway trucks. There is an inner basin, with an area of 2 acres, with no jetties for large vessels. An iron jetty extends out from the corner of the East Quay with a crane at its extreme end, and at the East Quay there is ample accommodation for smaller craft. There are ample facilities for handling and storing freight.

There is a total of 4,250 ft. of quayage. There are seven travelling steam cranes capable of discharging 25 to 60 tons per hour each; one hand timber crane to lift from 15 to 25 tons per hour. In the inner basin there are three 3-ton travelling cranes and one 7-ton fixed crane.

Fresh beef plentiful and good; moderate supply of fruit and vegetables.

Venezuela—La Guayra (*continued*).

tables, expensive; wood, water, and coal can be had. Repairs to machinery can be made.

Pilotage.—Optional. If taken the rates are from 50 to 84 bols.

Port Charges.—Water Dues:—All merchant steamers entering this port, wherever from, whether or not taking a supply of water, but receiving cargo or passengers, pay 240 bols.; if calling twice on the same voyage, 280 bols. Sailing vessels, 1 bol. per reg. ton. **Captain of Port:**—12 bols. 50 c. **Doctor:**—12 bols. 50 c. **Interpreter:**—Charge vary, about 48 bols. **Harbour Dues:**—10 c. per reg. ton; 1 bol. per metric ton of cargo discharged; 1 bol. per metric ton of cargo shipped. **Commission:**—For entering and clearing a vessel, £5. **Labour:**—On board 1 bol. 50 c. per hour.

Pro Forma Charges on a steamer of 2,000 tons net reg. :—

	Bols.	c.
Captain of port	12	50
Interpreter	48	00
Doctor's visit	12	50
Contribution to hospital	20	00
Water tax	240	00
Bill of health	13	25
Boat hire	12	00

358 25 = £14 3s. 9d

MARACAIBO.

Maracaibo, in lat. 10°34' N., long. 71°48' W., is situated on the west shore of the Lake of Maracaibo, about 25 miles from Fort San Carlos and the bar.

Population.—50,000.

Imports.—Cotton goods, silk and woollen goods, butter, flour, petroleum, iron and steel manufactures, grain, medicine, and chemical products.

Exports.—Coffee, cocoa, hides, skins, dividivi, etc.

Accommodation.—The harbour is deep enough to contain the largest vessels, but owing to the bar dividing the lake from the Gulf of Maracaibo, only vessels of a limited tonnage can go there. Inside the bar is 5 to 7 fathoms close to the town. The depth of water on the bar varies from 10 to 18 ft., but no vessels crossing the bar should draw more than 11½ ft. (English) on even keel on account of the so-called inner bar or Channel of Tablazo, which at high tide seldom contains more than 11½ to 12 ft. of water. The inner bar or Tablazo is not dangerous, the ground being soft mud. Vessels can cross the bar outward and inward without the assistance of a tugboat. Outside the Tablazo, but inside the real bar, cargo may be taken down to a draught of 15 ft. For this a special permit from the Custom House is required; this, however, is seldom granted. Vessels are not allowed to enter the Tablazo Channel without a pilot, but would be detained at the Fort of San Carlos. Vessels for Maracaibo should anchor near the buoy outside the bar and wait for a pilot in daytime. Care should be taken to get to the bar early in the morning, as it is not safe to remain near the bar during the night. When the pilot-boat nears the vessel, the latter must lower a boat to receive the pilot. The landmark for vessels approaching the bar is the island of Toas, inside the bar, with a small

Venezuela—Maracaibo (*continued*).

hill on it, the top of which can easily be seen at a distance of 10 miles and even more. The anchorage off the town is in 4 to 5 fathoms. Cargo is discharged at a wharf at which there is generally room for two or three vessels at the same time. The water alongside the wharf varies from 9 to 13 ft. 6 in. Most of the vessels frequenting Maracaibo are of small tonnage. Sailing vessels up to 300 tons reg. have visited the harbour, and steamers up to 1,800 tons reg. call, but cannot take a full cargo. Sailing vessels are allowed to proceed in ballast to the inner parts of the lake, to take their cargo.

Pilotage.—Compulsory. Pilotage on the lake costs from 3 to 4 bols. per day.

Port Charges.—**Interpreter** :—For vessels from abroad, 40 bols. Vessels trading with Curazao only pay 12 bols. 50 c. **Harbour Master** :—Including doctor's fees, 25 bols. **Buoy Duties** :—Including pilotage, per Venezuelan ton, 1 bol. Men-of-war, national or foreign, and vessels in the national service and in the coasting trade, the measurement of which does not exceed 100 tons, are exempt from buoy duties. **Dispatch** :—Vessels of any capacity must be discharged, according to law, within 5 days, unless delayed by the Custom House, but this, if necessary, always allows 3 days more, which extension must be asked for before the 5 days have expired. After the expiration of these, a fine of 250 bols. to 500 bols. has to be paid.

PUERTO CABELLO.

Puerto Cabello, in lat. $10^{\circ}19'$ N., long. $68^{\circ}2'$ W., is on the Gulf of Triste, about 45 miles from Valencia, of which it is the seaport.

Population.—About 15,000.

Exports.—Cedar, mahogany, ore, coffee, cotton, cocoa, indigo, hides, deer-skins, and fustic.

Accommodation.—The harbour has an area of 12 acres, the entrance is 600 ft. wide and 26 ft. deep at ordinary low tide; the depth in the harbour and at the quaysides at ordinary low tide is also 26 ft. The quayage is 1,500 ft. long, but there are no cranes or other similar facilities. Vessels find a safe anchorage in the bay in 50 to 100 ft. of water. There is no bar, and the tides only rise and fall about 2 ft.

There is a floating dock with 300 ft. available docking length at the opening level, 80 ft. wide at the entrance and 19 ft. deep on the sill; the lifting power is 2,000 tons. A large machine shop undertakes all repairs. There is railway connection with Valencia.

Port Charges.—**Water Dues** :— $12\frac{1}{2}$ c. per ton, maximum 75 bols., have to be paid whether water is taken or not. **Labour** :—2 Maq. dols. per man for 8 hours' work. **Light Dues** :— $1\frac{1}{4}$ c. per ton, for any kind of vessel.

Pro Forma Charges on a steamer of 1,000 tons :—

	Maq. Dols.	c.
Water dues	75	00
Measuring the vessel	10	00
Port rules	0	50
Interpreter's fees	24	50
Harbour-master's fees	3	13
Doctor's fees	3	13

Carried forward 116 26

Venezuela—Puerto Cabello (*continued*).

	Maq.	Dols.	c.
Brought forward.	.	116	26
Licence	.	2	63
Stamps and stamp paper	.	5	00
Town tax	.	12	50
Light fees	.	12	50
<hr/>			
		148	89 = £23 11s. 8d.

Note.—Foreign vessels are only measured when visiting a Venezuelan port for the first time, and town tax is only levied on vessels not calling regularly at the port.

Sailing vessels pay the same charges as steamers.

Cattle steamers are charged an extra 125 dols. for each trip as town tax.

TUCÁCAS.

Tucácas, in lat. 10°40' N., long. 68°24' W., is about 25 miles N.W. of Puerto Cabello.

Exports.—Coffee and copper ore.

Accommodation.—After passing Punta Brava vessels should keep about $\frac{3}{4}$ of a mile off the island. There is 5 fathoms of water opposite the new Custom House, but it gradually shallows towards the village. The bottom is of muddy sand. This new Custom House, which is not yet occupied, stands on the site of the old Ore House mentioned on charts, and on its tower there is a Government light visible for about 5 miles. Anchorage is good and vessels can get well inside Punta Brava to facilitate lightering. There is no wharf for large vessels. Vessels are now cleared at the Tucácas Custom House. Floating plant at this port consists of lighters, steam launches, and a cargo steamer, plying between here and Puerto Cabello. Masters cannot rely upon obtaining a supply of fresh water. There are facilities at Punta Brava for ballasting. There is a patent slip to take vessels to 120 tons.

Port Charges.—About the same as at Puerto Cabello.

Part IV.

ASIA.

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ASIA.

ADEN and PERIM.

Aden is a British dependency on the south-west coast of Arabia, about 100 miles E. of Bab-el-Mandeb. Perim, which forms part of the dependency, is a small island at the entrance to the Red Sea. They have a combined area of 80 square miles, Aden 75 square miles, Perim 5 square miles. The Colony is non-productive, but does a large transit trade to and from the neighbouring countries. This trade is of an annual value of a little over £6,000,000, the imports for the fiscal year 1907 being valued at £3,460,000, and the exports at £2,690,340. The imports include coal, cotton, silk, hides, skins, grain, and tobacco, and the exports coffee, feathers, gums, hides, and skins.

The settlement is subject to the Government of Bombay, the currency unit being the Indian rupee. Accounts are kept in rupees, annas, and pies; 12 pies make 1 anna, and 16 annas make 1 rupee.

Weights and measures, seers and maunds: 40 seers make 1 maund; 1 seer = $11\frac{1}{2}$ oz.; 1 maund = 28 lb.

ADEN.

Aden is in lat. $12^{\circ}47'$ N., long. $45^{\circ}2'$ E. It is almost a free port, the only articles on which a duty is levied being ammunition, wine, beer, and spirits.

Population.—About 41,000.

Imports.—Coal, cotton, cotton and silk piece-goods, grain, live stock, metals, provisions, seeds, tobacco, ammunition, wine, beer, and spirits.

Exports.—Coffee, dyes, ostrich feathers, gum, hides, ivory, salt, and pearls.

Accommodation.—The outer harbour runs nearly N. and S.; it is protected on the E. by the peninsula of Aden, on the W. by Little Aden, or Jibbel Hassan, and on the N. by the Arabian coast. Vessels entering the outer harbour are not compelled to take a pilot. There is good flat bottom anchorage for heavy draught vessels in 6 fathoms, and steamers during the N.E. monsoon are bunkered in the outer harbour; at all times, day and night, lighters are kept ready loaded. The inner harbour runs nearly E.N.E. and W.S.W., and is protected on the E. by the isthmus which connects the peninsula with the continent, on the N. by the Arabian coast, and on the S. by the peninsula of Aden. The depth of water in the inner harbour is from $17\frac{1}{2}$ to 28 ft., with a flat muddy bottom. Steamers entering the inner harbour are moored to buoys. Dredging operations still continue to deepen and extend the harbour, and the proposal to deepen the harbour to 30 or 31 ft., and widen and deepen the entrance channel, is now before the Government for sanction. Pilotage is compulsory for entering the inner harbour. A staff of six European pilots always board ships on their arrival, day and night. Twelve inch centrifugal pumps and boilers, and pulsmeters for salvage and other purposes are always ready at a few

Vessels discharging coal will have a chance of taking a full cargo to India, and not have to proceed in ballast as before.

Pilotage.

Per 100 tons or part thereof :—

	Rs.	a.	p.
For taking a vessel into the inner harbour by day	2	0	0
" " " " night	3	0	0
" " out of the inner harbour by night	1	0	0
No fee for piloting a vessel out of the inner harbour by day.			

Per 100 tons or part thereof :—

For taking a vessel both to and from her anchorage in the outer harbour by day	Rs. a. p.
For taking a vessel to her anchorage in the outer harbour by night	1 0 0
For taking a vessel out of the outer harbour by night	1 8 0
For taking a steamer or square-rigged vessel alongside another steamer or square-rigged vessel in the port, or for moving a vessel from one place to another in the port	1 0 0
For piloting to proper anchorage in the outer harbour a vessel anchored in the fairway	1 rupee in addition to any other fees that may be payable.
For a pilot who is by reason of a vessel not being ready to proceed detained therefor more than one hour after he has come on board, 10 rupees.	

Port Charges.—

Leviable once a month in respect of each vessel entering the port, at the following rates :—

	Annas.
Class I.—Sea-going vessels of 10 tons and upwards entering the port, and not included in Class II or III, per reg. ton	1
Class II.—Sea-going vessels of 10 tons and upwards entering the port in ballast, and not conveying passengers, per 100 reg. tons or part of 100 reg. tons	4
Class III.—Sea-going vessels of 10 tons and upwards entering the port, but which do not discharge or take in any cargo or passengers, per 100 reg. tons or part of 100 reg. tons	4

Vessels of Classes II and III, 1 R. 8 a. per day; vessels of Class I, 3 Rs. per day, hours after arrival.

Ballast :—Stone, 2 Rs. to 4 Rs. 3 annas per ton. **Labour :—**From 12 anna to 1 rupee per day. **Provisions :—**Water, 3 Rs. 12 annas per 100 gallons ; i 75 Rs. per ton ; bread, 3 annas per loaf ; biscuits, 5 Rs. per maund of lb. ; beef or mutton, 4 annas per lb. ; salt beef, 90 Rs. per tierce ; s pork, 65 Rs. per barrel ; flour (country), 19 Rs. per bag of 196 lb. ; flo (Trieste), 29 Rs. per 196 lb. ; fresh eggs, $3\frac{1}{2}$ Rs. per 100 ; potatoes, 2 to Rs. per maund ; sweet potatoes, 2 Rs. per maund ; onions, 2 Rs. 8 anna to 2 Rs. 12 annas per maund ; fowls, 6 to 8 Rs. a dozen.

Cargoes of coal are discharged at 8 annas per ton. Attendance dubash, 30 Rs., when a full cargo is landed.

Aden and Perim—Aden (*continued*).

Pro Forma Charges on a steamer entering with a cargo of 5,527 tons of coal, and leaving in ballast:—

	Rs.	ans.
To harbour dues, 2,613 reg. tons at 1 anna	163	5
„ pilotage at 2 Rs. on 2,700 reg. tons	54	0
„ mooring fees, 5 days at 3 Rs. per day	15	0
„ boat hire, running mooring line	5	0
„ telegrams to London	9	0
„ telegrams to Calcutta	6	0
„ discharging 5,527 tons coal at 8 annas	2,763	8
„ 97 lb. fresh mutton at 4 annas	24	4
„ 110 lb. fresh beef at 4 annas	27	8
„ 124 lb. fresh vegetables at 2 annas	15	8
„ 40 lb. fresh fish, at 3 annas	7	8
„ two live sheep	14	0
„ 200 eggs at 3½ Rs. per 100	7	0
„ dubash attendance	30	0
„ gharry hire	8	0
	3,149	9 = £209 19s. 5d.

PERIM.

Perim Island, in lat. 12°38' N., long. 43°18' E., is situated in the Strait of Bab-el-Mandeb, at the entrance of the Red Sea, about 96 miles from Aden, of which it is a dependency.

Export.—Coal.

Accommodation.—Good anchorage on coral and sand is to be had in a bay on the S. side of the island, in 3 to 8 fathoms. The harbour is easily entered by the largest steamers, day or night, being well buoyed and lighted. Engine repairs can be effected, and the Perim Coal Company has always ready at call salvage tugs, pumps, wrecking gear, and equipment. Vessels can be tipped near the repairing yard, where there are powerful winches available for the operation. The pier is faced with concrete blocks, and has a depth of 12½ ft. at low water springs. Warping buoys have been laid down for vessels using the pier. Mooring buoys have been laid down in 25 to 30 ft. of water, and vessels not using the pier can load and discharge by means of lighters. Tides rise 7 ft. at springs and 3 ft. at neaps. There is a patent slip to raise 100 tons, temporary sheers of 15 tons, ten 5-ton and 3-ton cranes, and a floating derrick to lift 5 or 6 tons. Three condensers supply fresh water, of which there is always 230 tons kept afloat for shipping. Ice is made, there being always 20 tons in stock. Vessels can coal at the rate of 50 to 80 tons per hour. The coal is delivered by cubic measurement from lighters.

Pilotage.—Steamers calling for coal are supplied with a pilot by the Company, free of cost. Pilotage, in and out, if no coal is taken, £1 1s. Colliers, discharging coal, pay 15 Rs. pilotage in and out.

Port Charges.—**Colliers**:—Discharging coal, 8 annas per ton. Use of mooring buoys, 30 Rs. **Hire of Tubs** and shoots, 120 Rs. **Boat Hire**:—Clearance and attendance, 36 Rs. Medical attendance and **Bill of Health**, 50 Rs. **Winchmen**:—2 Rs. each. Steamers calling for coal and supplies pay as follows: Health Officer's fee for Bill of Health (day or night), £1 1s. **Light Dues**:—£1 1s

CEYLON.

Ceylon, a British Crown Colony, is an island lying to the south-east of India, from which it is separated by the Gulf of Mannar and Palk Strait. It has an area of 25,332 square miles, and an estimated population of 3,988,064.

Commerce.—The trade of the island is of an annual value of nearly 16½ million pounds sterling, the official returns for 1907 showing imports valued at £8,010,000, and exports at £8,623,333. The chief articles of import are flour, paddy, rice, refined sugar, coal, manure, galvanized iron, hardware, haberdashery, jewellery, kerosene oil, machinery, and tea chests; the exports include areca nuts, cacao, cinnamon, citronella oil, cocoanuts, coir (fibre, rope, and yarn), copra, plumbago, poonac, rubber, and tea. The values of the imports and exports represent the wholesale values at the place of import or export. The declarations, which are subject to scrutiny and penalty, are made in accordance with ascertained values, the Chamber of Commerce assisting by supplying the particulars on which a rated duty is levied. The return of quantities of imports is made up from invoice statements, or by actual examination; of exports, from the shippers' declarations, and by examination of the shipping documents, shippers being liable to penalties for misstatement.

Mercantile Marine.—The commercial marine of Ceylon, registered on January 1, 1907, consisted of 151 vessels of 11,954 tons, made up of 8 steamers of 982 tons, and 143 sailing vessels of 10,972 tons.

Internal Communications.—The total length of railways open at the end of 1907 was 562½ miles. Official sanction has been obtained for the construction of a number of new lines, including those from Ragama to Negombo, and Avisavella to Ratnapura, whilst sanction has been given for the survey of the Mannar railway, an important link of communication with South India. The post and telegraph service is highly organized, a general revision of the inland postage rates, raising the unit of weight for letters from 1 oz. to 4 oz., having been recently sanctioned.

Currency, Weights and Measures.—The currency of Ceylon consists of—Copper : Ceylon 5 cent, 1 cent, ½ cent, and ¼ cent pieces. Silver : The Indian rupee, with subsidiary Ceylon 50 cent, 25 cent, and 10 cent pieces. Gold : British sovereigns, which are legal tender at 15 Rs. per £. Ceylon Government notes of 1,000, 100, 50, 10, and 5 Rs. On December 31, 1907, the value of currency notes in circulation was 16,944,675 Rs. The Chartered Bank of India, Australia, and China; the Hong Kong and Shanghai Banking Corporation; the Bank of Madras; the Mercantile Bank of India, Ltd.; and the National Bank of India, Ltd., do business in the colony.

The weights and measures of Ceylon are generally the same as those of the United Kingdom, although Sinhalese terms are sometimes employed as under :—

SINHALESE DRY MEASURES.

4 seers or neli	= 1 laha	= 1 gallon.
5 lahas or kurunis	= 1 parah	= 2·5 pecks.
2 parahs	= 1 pela	= 1·25 bushels.
4 pelas	= 1 Amunam	= 5 bushels.

Ceylon.

COLOMBO.

Colombo, in lat. 6°54' N., long. 79°55' E., is situated on the west coast of the island of Ceylon.

Population.—About 158,230.

Imports.—Cotton goods, liquors, hardware, oils, metals, rice, and foodstuffs.

Exports.—Coffee, cocoa, tea, cinchona bark, cardamoms, cinnamon, palm oil, coir, poonac, copra, ebony and other timber, essential and citronella oils, etc.

Accommodation.—Colombo has a commodious and safe harbour, affording complete shelter to a large number of steamers and sailing vessels. The depth of water in the harbour (30 ft.) is sufficient for the largest ocean steamers, and the approach to it is free from all danger. There is no bar. Loading and discharging is done by means of lighters.

Colombo Harbour is enclosed on all sides, being bounded on the S. and E. by the land, and N. and W. by massive and substantial breakwaters. The sheltered water area of the harbour amounts to 660 acres at low water, approached through a western entrance 39 ft. deep at low tide and 800 ft. wide; and a northern entrance in 34 to 35 ft. of water and 700 ft. wide, the rise of tide at Colombo being only 2 ft. at springs.

The quays and jetties have a total length of 6,150 ft. They are mostly Government property, and only lighters go alongside them. There are 18 new coaling jetties for lighters, each 190 ft. long. There is a steam crane on the Government jetty to lift 33 tons, and 16 cranes on the various wharves to lift up to 3 tons each. A graving dock has been constructed, opening on to the eastern shore of the harbour, 711 ft. long over all, 83½ ft. wide at the entrance at the high spring level, and 32 ft. on the sill at high springs. There is a patent slip (cradle 200 ft.) to raise 1,200 tons.

The Colombo light is situated in the centre of the fort, on the clock-tower, 135 ft. above the sea. It is a revolving white light showing a triple flash in quick succession every 10 seconds; in clear weather it is visible about 17 miles.

Time Signals.—Chronometers can be checked. The semaphore on the flagstaff adjoining the Master Attendant's office is inclined to an angle of about 45° at 5 minutes before the signal. The semaphore is placed horizontal at 2 minutes before the signal and dropped at 4 h. 15 m. 0 s. p.m. India standard mean time, equal to 22 h. 45 m. 0 s. Greenwich mean time, and 4 h. 4 m. 22·3 s. local mean time. The signal is also given at 8 h. 15 m. 0 s. a.m. The signal is not easily seen from the outer parts of the harbour, and is irregular.

Pilotage.—All vessels entering the port of Colombo pay pilotage at the following rates, which covers them both inwards and outwards :—

Vessels up to		499 tons gross										Rs.
	from	500 to	999 tons gross	.	.	.	.	.	.	.	.	15
		1,000	1,499	"	.	.	.	.	.	.	.	20
		1,500	1,999	"	.	.	.	.	.	.	.	25
		2,000	2,499	"	.	.	.	.	.	.	.	30
		2,500	2,999	"	.	.	.	.	.	.	.	35
		3,000	3,499	"	.	.	.	.	.	.	.	40
		3,500	3,999	"	.	.	.	.	.	.	.	45
		4,000	4,499	"	.	.	.	.	.	.	.	50
		4,500	4,999	"	.	.	.	.	.	.	.	55
				"	.	.	.	.	.	.	.	60

Vessels from	5,000 to	5,499 tons gross	.	.	.	.	.	.	Rs.
"	"	5,500 "	"	.	.	.	.	.	65
"	"	6,000 "	"	.	.	.	.	.	70
"	"	6,499 "	"	.	.	.	.	.	75
"	"	6,500 "	"	.	.	.	.	.	80
"	"	7,000 "	"	.	.	.	.	.	85
"	"	7,500 "	"	.	.	.	.	.	90
"	"	8,000 "	"	.	.	.	.	.	95
"	"	8,500 "	"	.	.	.	.	.	100
"	"	9,000 "	"	.	.	.	.	.	105
"	"	9,500 "	"	.	.	.	.	.	110
"	"	10,000 "	"	.	.	.	.	.	115
"	"	10,500 "	"	.	.	.	.	.	120

Towage.—Scale of charges for use of Government tugs :—

1. For vessels under steam.—For each of the following operations : Berthing, unberthing, attending to patent slip, attending from patent slip, the following charge is made :—

	Rs.
Vessels up to 2,499 tons gross	10
Vessels from 2,500 to 4,999 tons gross	15
Vessels from 5,000 to 7,499 tons gross	20
Vessels from 7,500 to 9,999 tons gross	25
Vessels from 10,000 tons upwards	30

provided that the operation is completed within an hour.

For every additional hour, or fraction of an hour, a charge of 25 Rs. is made.

2. For vessels not under steam, including sailing craft.—To and from patent slip, 30 Rs. each way.

3. To and from graving dock.—For all vessels, whether under steam or not : To or from graving dock, for first hour, 30 Rs., and for every additional hour or fraction of an hour, 25 Rs.

4. Ordinary towage of sailing craft.—For sailing craft in or out of harbour, 25 Rs. per hour, the minimum charge to be 13 Rs.

5. General.—A tug standing by, by order, but not actually assisting, to be charged for as if her services had been used.

6. For special work, not included in any of the above, a special charge to be made by the Master Attendant, having regard to the circumstances of the case. Any dispute as to charge under this section to be referred for decision to the Harbour Board.

7. For the use of the tugs' fire hydrant for extinguishing fires, 750 Rs per tug per day of 24 hours or any part of 24 hours, inclusive of all stores etc., or for any other purpose for which they may be requisitioned, 30 Rs per hour or fraction of an hour.

Port Charges.—Port Dues :—

[illegible]

These dues to clear a vessel inwards and outwards, providing her stay in the port does not exceed 96 hours. If exceeding 96 hours and not exceeding

Ceylon—Colombo (continued).

ing 288 hours, $\frac{1}{2}$ of the scale to be added. If exceeding 288 hours, 15 Rs. per day buoy rent is charged in addition.

The above rates to be applicable to all vessels—whether steamers, sailing vessels, or native craft.

Discharging or Loading Dues :—Vessels loading or discharging cargo, $12\frac{1}{2}$ c. per ton up to 200 tons register; 25 c. per ton over 200 tons register. Transshipment cargo, if landed and re-shipped after the fifth day of landing, is liable for harbour dues and rent. Vessels of 300 tons and under are allowed to land or ship 5 tons of cargo free. Vessels over 300 tons are allowed to land or ship 10 tons free. Coal, cargo 25 c. per ton, payable inwards only. Cattle, 1 R. per head; horses, 5 Rs. per head; sheep and goats, 20 c. per head.

Bill of Health :—10 Rs. 50 c. **Stevedore** :—Steamers loading Ceylon produce, stowing only, $37\frac{1}{2}$ c. per ton; deck hands, if required, extra. Sailing vessels, stowing only, 45 c. per ton; taking in and stowing, 70 c. per ton. Discharging, general cargo, 25 c. per ton; coal, 25 c. per ton—buckets and shoots extra, according to agreement; rice, 25 c. per ton; heavy weights by special agreement. **Dispatch** :—About 500 tons of tea and other light freight can be stowed in, say, 24 hours. Coal and rice can be discharged from steamers at the rate of 500 to 800 tons per day of 12 hours.

Coal :—Large supplies of best South Wales steam coal can be procured, and steamers can be bunkered with good dispatch at any hour of the day or night. The average price is from 25s. to 35s. per ton. **Ballast** :—Loading sand, about 1 R. 50 c. per ton, free on board. Loading stone, about 3 Rs. per ton, free on board. Discharging sand, as per special agreement; stone, free from alongside for value of the ballast. **Water** :—2 Rs. 20 c. per ton free on board.

Pro Forma Charges on a steamer of 9,200 tons register, with a cargo of 1,000 tons in, and ballast out :—

	Rs.	c.
Harbour dues	120	00
Light dues (Basses and Minicoy)	92	74
Bill of health	10	50
Pilotage	110	00
Dubash bill, say	265	00
Water bill, 50 tons at 2 Rs. 20 c.	110	00
Customs working after hours	35	00
Tonnage dues inward	250	00
Stevedore, discharging cargo	220	00
Tallying cargo	90	00
Telegrams as per memo, say	10	00
Boat hire, postages, etc.	9	50
Brokerage on freight, £1,250	187	50
Agency fee, £10 10s.	157	50

1,667 74 = £111 3s. 8d.

JAFFNA.

Jaffna, in lat. $9^{\circ}45'$ N., long. $80^{\circ}20'$ E., is situated on the N. coast of Ceylon, and is connected with Colombo by railway.

Population.—45,000.

Imports.—Paddy, rice, cotton goods, curry stuff, grain, earthenware, jewellery, iron bars, castor oil, sugar, cattle, onions, yarn, bricks, and tiles.

Exports.—Avaram bark, cuttle-fish bones, tobacco, palmyra timber, beche-de-mer, jaggery, cocoanuts, dried fish, honey, and salt.

Ceylon—Jaffna (*continued*).

Accommodation.—The town stands on an inlet which communicates with the Gulf of Manaar, and is navigable for boats. Vessels of 12 ft. draught can reach to within 3 miles of the town. The climate is healthy and provisions are cheap.

Port Charges.—8 c. per ton net reg.

KAITS.

Kaits is situated on the northern side of the island of Velanai, and south of Karativu.

Population.—2,000.

Imports.—Grain.

Exports.—Palmyra timber and tobacco.

Accommodation.—It is an open port throughout the year, but the S.W. monsoon is the busiest season, there being then sometimes 30 to 40 vessels in the anchorage at the same time. The entrance lies across the flats, between Karativu and Eluvaitivu. Depth across the flats at high water, 7 ft. 3 in. to 7 ft. 9 in.; 6 ft. 9 in. to 7 ft. at low water, and 9 ft. to 10 ft. at the inner anchorage. Small coasting vessels lie in the outer anchorage in $2\frac{1}{2}$ to 3 fathoms, and discharge part of their cargo before proceeding to the inner anchorage. Steamers should anchor in 4 fathoms, sand, with the N. point of Eluvaitivu bearing S.E. distant about 1 mile.

Fort Hammonheil is the quarantine station for the port. Coasting vessels are hauled up and repaired here.

Pilotage.—Nil. **Towage:**—According to agreement.

Port Charges.—**Boat Hire:**—According to agreement. **Labour:**— $37\frac{1}{2}$ c. to 50 c. per man per day.

KANKESANTURAI.

Kankesanturai is in lat. $9^{\circ}45'$ N., long. $79^{\circ}59'$ E., and is 14 miles from Jaffna.

Accommodation.—It is an open roadstead, with a depth of 5 ft. close to the shore, and is the chief port of call for steamers during the S.W. monsoon; they commence calling in February or March, and continue until October.

Two stone piers, in ruins, will be noticed on the beach, on the western of which is built the lighthouse; a small wooden pier, which can be used by boats during the S.W. monsoon, has been built on the beach.

Anchorage may be obtained off Kankesanturai in 5 fathoms, sand and mud, with the lighthouse bearing S.S.W., distant $3\frac{1}{2}$ cables; and the rocky point about $1\frac{1}{2}$ miles west of the lighthouse, just shutting in the distant point. Vessels are recommended not to anchor to the westward of the lighthouse, as the bottom is foul in that direction.

This port has railway connection with Colombo.

Port Charges.—8 c. per ton net reg.

PEDRO POINT.

Pedro Point is in lat. $9^{\circ}50'$ N., long. $80^{\circ}26'$ E.

Accommodation.—The town and port is situated about $\frac{3}{4}$ mile

Ceylon—Pedro Point (*continued*).

westward of the Point, the Custom House, with its red roof, being a conspicuous mark near the landing place. The port is open from about the middle of February to the middle of October.

A fringe reef lines the coast and extends from a half to one cable from the shore; outside this the water deepens rapidly to the 5-fathom line, which is about three cables from the beach.

Valluvedditurai, situated about 5 miles W. of Pedro Point, is a port where vessels of from 30 to 250 tons are built. A break in the reef affords good entrance to boats.

Port Dues.—8 c. per ton net reg.

POINT DE GALLE.

Point de Galle is in lat. 6°9' N., long. 80°9' E. Distance by sea from Liverpool, 10,268 miles; by Suez Canal, 6,740 miles.

Population.—39,000.

Imports.—Cotton goods, rice, coal, grain, etc.

Exports.—Tea, coir, cinnamon, cocoanuts, cocoanut oil, cardamoms, sapanwood, citronella oil, lemongrass oil, cinnamon leaf oil, hides, plumbago, poonac, copra, kittool fibre, and damar.

Accommodation.—There is sufficient water here for the largest ships. Vessels are loaded and discharged by cargo boats, for which there are three jetties, 180, 250, and 280 ft. long respectively. These are equipped with small cranes. Small vessels drawing 6 ft. can anchor at the end of the piers at low water; springs rise 2 ft. The anchorage is in 5 to 6 fathoms, sandy bottom, on the west side of the bay. Vessels calling for orders may anchor in 14 fathoms, with lighthouse bearing N.N.E., and distant from 1 to 1½ miles. Vessels making the port for cargo, coal, or stores, will find good anchorage in the harbour itself, in from 5 to 6 fathoms. Considerable blasting operations have been going on during the N.E. monsoon, and several patches of ground cleared, extending the anchorage considerably.

Vessels coming to this port for orders should always enter it during the S.W. monsoon, i.e., from May to September, in preference to keeping under weigh outside, as they often get to leeward, leaving their masters on shore.

Port Regulations.—No vessel of above 100 tons shall enter the port of Galle, or leave it, or move from one place to another within it, between sunset and sunrise, without the special permission of the Master Attendant.

Mail steamships or other public vessels, should the public service require it, may on extraordinary occasions leave the port until midnight, on application to the Master Attendant, who may give the necessary orders.

All vessels are to be berthed by the pilot bringing them into the port, and after mooring are required to have on deck, ready to veer away, 15 fathoms of each bower cable, should they be called on suddenly to do so by the Master Attendant or his deputies.

All vessels shall anchor, moor, and unmoor when and where required by the Master Attendant; all vessels in the way of others proceeding to sea shall move when required to clear a passage or channel; and all vessels shall be moved or warped from place to place as required by the Master Attendant.

No vessel shall cast off a warp or hawser that has been made fast to her

Ceylon—Point de Galle (*continued*).

to assist a vessel in mooring, without being required so to do by the pilot or officer in charge of the vessel mooring.

All vessels are to rig in their jib and driver booms, and to turn in board boat's davits; vessels laying with their yards square, or with spars or other things projecting from their sides which may occasion fouling with another vessel, will do so at their own risk, and shall remove such spars, or other things, when required by the Master Attendant.

All vessels shall, at the setting in of the south-west monsoon, about the months of May and June, send down top-gallant yards and masts and otherwise be kept as snug as possible aloft, and be prepared to slack away their stern moorings during heavy squalls, in preference to holding on until they part.

In the event of a vessel parting or bringing home her stern moorings, and there being a vessel moored to leeward of her, the slacking away of whose stern moorings would enable the weather vessel to swing clear to her bower anchors, the vessel to leeward must immediately slack away her stern moorings, and should it be necessary, and she has room, also veer away sufficient bower cable to allow the weather vessel to clear her.

Masters of vessels shall give the Master Attendant immediate notice of the loss of an anchor, but are expected to recover their own anchors; should they require assistance, an anchor launch and pilot can be had on application at the Master Attendant's office.

Vessels shall moor head and stern as soon as possible after arrival.

Commanders of all vessels within the port of Galle are required to permit warps to be made fast for the purpose of assisting vessels in mooring or shifting their berths, and to keep them fast until requested to let them go by the officer in charge of the vessel mooring.

All persons are prohibited from making fast any vessel, raft, timber, or other articles to any buoy, beacon, or sea mark.

No vessel not carrying a properly qualified medical officer shall communicate with the shore, or permit any person, except a pilot, to board them until they have permission from the Health Officer.

Vessels provided with a properly qualified medical officer shall not land cases of infectious disease without the knowledge and consent of the local medical officer to the Government.

Masters of vessels shall furnish the Master Attendant and Collector of Customs with a list of all passengers arriving at, or about to embark from, the port on board their vessel.

Masters of vessels are required by law to attend the Custom House within 24 hours of their arrival, and report their ships, whether bound for the port or only seeking; by neglecting to do so they subject themselves to a penalty of 1,000 Rs.

The firing of guns or rockets or burning blue lights between the hours of sunset and sunrise are prohibited.

All vessels at anchor within the port of Galle shall exhibit between sunset and sunrise, where it can be best seen, but at a height not exceeding 20 ft. above the hull, a white light in a globular lantern of 8 in. in diameter, and so constructed as to show a clear, uniform, and unbroken light visible all round the horizon at a distance of at least one mile.

No boat, canoe, or steam launch shall go alongside or within 50 fathoms of any vessel arriving within the harbour until such vessel has been moored

Ceylon—Point de Galle (*continued*).

in her berth; nor, in the event of the quarantine flag flying, until such flag has been hauled down.

No vessel, whether sailing or steam, except a native craft, shall come into or leave the harbour without a pilot in the service of the Government being on board.

No vessel within the harbour shall display at night any electric arc light, unless such light be so shaded as to throw the light on the vessel's deck only.

Pilotage.—Compulsory. Shipmasters requiring the services of a Government pilot, either for bringing up in the roads or for entering the harbour, should make signal as early as they possibly can. Shipmasters are warned against employing native boatmen whom they may find cruising about outside at considerable distance, representing themselves as outside pilots. The pilot boats have the words, "Government pilot boat" painted on their sides, and when the flag—white, red, white, horizontal—is hoisted ships may run for them.

All vessels entering or leaving the port of Galle pay pilotage according to the following scale, whether they make a signal for a pilot or not:—

Vessels of	Tons.	Tons.	Inwards.		Outwards.	
			Rs.	c.	Rs.	c.
600 and upwards	—	600 ..	30	00	30	00
400 and less than	600	400 ..	22	50	22	50
200	200	200 ..	15	00	15	00
100	100	100 ..	11	25	11	25
Vessels under 100	100	7	50	7	50	
Native vessels under 200 tons free.						

Pilots detained on board any vessel longer than 48 hours are entitled to claim 4 Rs. for every day's detention after that time. Application for pilots to be made to the Master Attendant in writing or by signal, viz.,

In the daytime.—The following signals numbered 1 and 2, when used or displayed together or separately, shall be deemed to be signals for a pilot in the daytime:—

1.—To be hoisted at the fore, the jack or other national colour usually worn by merchant ships, having round it a white border one-fifth of the breadth of the flag; or

2.—The international code pilotage signal indicated by P. T.

At night.—The following signals numbered 1 and 2, when used or displayed together or separately, shall be deemed to be signals for a pilot at night:—

1.—The pyrotechnic light commonly known as a blue light, every 15 minutes; or

2.—A bright white light flashed or shown at short or frequent intervals just above the bulwarks, for about a minute at a time.

Port Charges.—Port Dues:—Vessels loading or discharging cargo above 10 tons, 8 c. per reg. ton; under 10 tons, free. Vessels in ballast, or calling for orders or coal, are free of port dues. **Mooring:**—Vessels are moored with stern hawsers, supplied by the Government at 5 Rs. per day; hauled down and weighing anchor, 10 Rs. **Bill of Health:**—10 Rs. 50 c. **Ballast:**—Stone, 2 Rs. 25 c.; sand, 1 R. 25 c. per ton. **Provisions:**—Fresh beef, 25 c. per lb. **Water:**—Fresh water can be had at the Watering Point, free of charge, by ships sending their own boats, or at 5 Rs. per ton from port water-boats, delivered alongside vessel. **Commissions:**—On ship's disbursements, 2½ per cent.; collecting freight inward (and outward) 5 per cent.

Ceylon—Point de Galle (continued).**Hire of Cargo Boats :—**

		Rs.	c.		Rs.	c.
A boat of 10 tons—harbour	.	2	50	outside the harbour	5	00
" 7½ "	"	1	87	" "	3	75
" 5 "	"	1	25	" "	2	50
" 2½ "	"	0	62	" "	1	25

During stormy weather these rates are not binding, and a special agreement must be made with the tindal of the boat.

Pro Forma Charges on a steamer of 2,500 tons register, cargo of general merchandise in, and ballast out, drawing 22 ft. 5 in. loaded :—

	Rs.	c.
Harbour dues at 8 c. per reg. ton	200	00
Running warps	2	50
Pilotage in and out and mooring	91	50
Bill of health	10	50
Boat hire	5	25
Lloyds for report slip	0	50

310 25 = £20 13s. 8d

TRINCOMALIE.

Trincomalie is in lat. 8°39' N., long. 81°11' E. Climate healthy.

Population.—About 12,000.

Imports.—Wheat, flour, sugar, tobacco, and other goods.

Exports.—Beche-de-mer, honey, kandab or tanners' bark, beeswax, shark fins or scales, bones, dried fish, ghee, paddy, horns, oil, hides, tobacco, coral, stones, and timber.

Accommodation.—This is a large natural harbour, affording safe anchorage for the largest vessels. There are two jetties, 160 and 60 ft. in length respectively. The former has 12 ft. alongside and the latter 6 ft. There is no bar. There is one 1-ton crane on the larger wharf. Small repairs to machinery can be executed. During the S.W. monsoon vessels can be anchored in Back Bay.

The Ceylon Steamship Company's steamers call here weekly.

Pilotage.—Compulsory for all vessels over 200 tons. 15 Rs. inwards and outward; 7½ Rs. each way.

Port Charges.—Port Dues :—8 c. per net ton.

Boat Hire :—

	In Back Bay when the vessel lies within 7 fathoms water, or in the Inner Harbour when lying to the N.E. of a line drawn through the S.W. points of York Island and Plantain Point.	In Back Bay when the vessel lies beyond 7 fathoms water, or the Inner Harbour when lying to the S.W. of a line drawn through the S.W. points of York Island and Plantain Point.
	Rs. c.	Rs. c.
For landing or shipping grain or sugar, per bag	0 2	0 4
For filling and shipping water, per ton	1 12½	2 00
For landing sand ballast, per ton	0 37½	0 50
For landing stone ballast, per ton	0 50	0 75
For shipping sand ballast, per ton	0 75	1 00
For shipping stone ballast, per ton	1 00	1 25
For the hire of any boat not exceeding 6 tons	2 25	3 50
For the hire of any boat exceeding 6 and not exceeding 9 tons	2 50	4 50
For the hire of any boat exceeding 9 tons	3 00	5 00
Cargo boats or canoes going off with passengers only, for each passenger, by day	0 25	0 37½
Cargo boats or canoes going off with passengers only, for each passenger between the hours of 8 p.m. and 5 a.m.	0 37½	0 50

Ceylon—Trincomalie (*continued*).

Note 1.—Boats hired on Sunday, Christmas Day, and Good Friday to receive double hire.

Note 2.—Boats retained all day to receive double hire.

Note 3.—Boats going off with cargo after sunset to receive double hire.

Note 4.—Boats retained all night with cargo on board, double hire.

Note 5.—Whenever boats are required to go from Back Bay to the Inner Harbour in the south-west monsoon, or from the Inner Harbour to Back Bay in the north-east monsoon, upon cases of emergency, a single hire shall be charged for the passage round, in addition to the regulated hire.

Note 6.—No cargo will be discharged or put on board of vessels anchoring in Back Bay between October 25 and April 1, without special leave from the collector of Customs.

CHINA.

The Empire of China comprises 22 provinces, each ruled by a Viceroy, who is directly responsible to the Emperor for the entire administration. Theoretically, the administration of the country is carried on by a number of Boards, but in practice the Imperial power is largely autocratic. The Chinese authorities place the area of the Empire at 4,277,170 square miles, and the population as 433,553,030, but independent estimates are much below these figures.

Commerce.—There are 40 Treaty Ports open to the mercantile fleets of the Powers which have treaties with China, these being Great Britain, France, United States of America, Russia, Germany, Austria, Italy, Spain, Denmark, Portugal, Brazil, Japan, and Peru. The ports thus open are Antung, Dairen or Tairen (Dalny), Tatungkow, Chin-Wang-Tao, Kiachow (Tsingtau), Changsha, Yochow, Nanking, Santuao, Kowloon (Hong Kong), Kongmoon, Samshui, Wuchow, Nanning, Lungkow, Lappa, Mengtza, Szemao, Tengyueh, Wenchau, Canton, Swatau, Kiungchow, Foochow, Amoy, Ningpo, Shanghai, Chinkiang, Kiukiang, Hankow, Chefoo, Tientsin, Newchang, Wu Hu, Ichang, Pakhoi, Soochow, Hangchow, Shasi, and Chungking. The collection of the Customs dues at these open ports (5 per cent. *ad valorem*), and the administration of the coast light service, are in the hands of the Imperial Customs Service, a department which is organized somewhat on the lines of the English Civil Service. During 1906 the value of the foreign trade of the Empire was £106,440,456.

Mercantile Marine.—At the end of 1906 the Chinese commercial navy had a total registered tonnage of 63,736, of which 40,683 tons was steam and 23,053 tons sail.

Currency, Weights and Measures.—100 candareens = 1 mace = 1 tael. All dues and duties are paid to the Customs in pure silver being at the rate of 11·40 per cent. higher value than the ordinary trading tael, which, although of a general value of 3s., varies according to the daily rate of exchange, but may be taken to average 2s. 8d. Until a few years ago the copper cash was the only coin in circulation, but recently one cent copper coins have been minted by the provincial authorities and put into circulation. Spanish and Mexican dollars circulate in even the most remote districts, and although the exchange varies from 72 to 77 taels to 100 dollars it may be taken as a general average that one dollar = 2s.

WEIGHTS.

10 mace	= 1 tael	= 1½ oz. avoird.
16 tael	= 1 catty	= 1½ lb. avoird.
100 catties	= 1 picul	= 133½ lb. avoird.
84 catties	=	1 cwt.
16 piculs	=	1 ton.

As used by the Customs and recognised by Treaty.

Internal Communications.—China had some 4,000 miles of railways open at the end of 1906, including the foreign systems on Chinese territory, but much of the internal trade is carried on by means of the numerous canals and navigable rivers. All internal waterways are open to foreign and native steamers alike.

Customs Regulations.—Within 24 hours after arrival the ship

China.

papers, bills of lading, etc., shall be lodged in the hands of the Consul, who will, within a further period of 24 hours, report to the superintendent of the Customs the name of the ship, her register tonnage, and the nature of her cargo. If, owing to neglect on the part of the master, the above rule is not complied with within 48 hours after the ship's arrival, he shall be liable to be sued in the British Consular Court.

The master will be responsible for the correctness of the manifest, which shall contain a full and true account of the particulars of the cargo on board. For presenting a false manifest he will subject himself to a fine of 500 taels, if sued in the Consular Court as above stated, but he will be allowed to correct, within 24 hours after delivery of it to the Customs officers, any mistake he may discover in his manifest, without incurring this penalty.

After receiving from the Consul the report in due form, the Superintendent of Customs shall grant the vessel a permit to open hatches. If the master shall open hatches, and begin to discharge any goods without such permission, he is subject to a fine of 500 taels, and the goods discharged shall be confiscated wholly, subject to an action before his Consul.

Tonnage Dues.—Merchant vessels of more than 150 tons burden shall be charged tonnage dues at the rate of 4 mace per ton; if of 150 tons and under they will be charged at the rate of 1 mace per ton.

Any vessel clearing from any of the open ports of China for any other of the open ports, or for Hong Kong, shall be entitled, on application of the master, to a special certificate from the Customs, on exhibition of which she shall be exempted from all further payment of tonnage dues in any open port of China for a period of four months, to be reckoned from the date of her port clearance.

The master of any British merchant vessel may, within 48 hours after the arrival of his vessel, but not later, decide to depart without breaking bulk, in which case he will not be subject to pay tonnage dues. But tonnage dues shall be held due after the expiration of the said 48 hours. No other fees or charge upon entry or departure shall be levied.

Commissions.—Commissions on shipping usually charged at the ports :—

On procuring freight	5 per cent.
On receiving inward freight	2½ "
On ship's disbursements	2½ "

Emigration.—Emigration of Chinese subjects is carried on under various legislative enactments, of which the most important are the act of Parliament of August 14, 1855, for the regulation of Chinese passenger ships; a Hong Kong Ordinance to consolidate the law relating to Chinese passenger ships and the conveyance of Chinese emigrants, called the Chinese Emigration Ordinance, 1889, and a Convention between Great Britain and China respecting the employment of Chinese labour in British Colonies and Protectorates, signed in London, May 13, 1904. The following extract from the fourth schedule of the Hong Kong Ordinance will be found to contain all the regulations which must be observed by shipowners. It should be remembered that a "Chinese passenger ship" includes every ship carrying from any port in Hong Kong, and every British ship carrying from any port in China, or within 100 miles of the coast thereof, more than 20 passengers being natives of Asia.

China.

Accommodation.—The following conditions as to the accommodation of passengers shall be observed :—

(1) The space appropriated to the passengers between decks shall be properly ventilated, and shall contain at the least 9 superficial and 54 cubical feet of space for every adult on board, that is to say, for every passenger above twelve years of age and for every two passengers between the ages of one and twelve years ; the height between decks shall be at least 6 ft.

(2) The accommodation for female passengers between decks shall be separate from that provided for male passengers ;

(3) A space of 4 superficial ft. per adult shall be left clear on the upper deck for the use of the passengers ; and

(4) A reasonable space shall be set apart as a sick bay, and sufficient latrines, both as to condition and number, shall be provided in suitable parts of the ship.

Deck Passengers.—Deck passengers may be carried, at seasons allowed by law, on such conditions as may from time to time be prescribed under instructions from one of His Majesty's Principal Secretaries of State, and, subject to such instructions, on the conditions following :—

(1) A suitable awning with screens shall be provided on deck, sufficient for the protection of the passengers from the sun and from rain ;

(2) The space appropriated to such deck passengers shall contain at the least 16 superficial feet for every adult, that is to say, for every passenger above twelve years of age and for every two passengers between the ages of one and twelve years ; and

(3) In case deck passengers are carried in addition to other passengers for whom accommodation between decks is provided, the space to be appropriated for deck passengers shall be reckoned exclusively of the space of 4 superficial feet per adult required to be left clear on the upper deck for the use of such other passengers.

Provisions.—The following conditions as to provisions shall be observed :

Provisions, fuel, and water shall be placed on board, of good quality, properly packed, and sufficient for the use and consumption of the passengers, over and above the victualling of the crew, during the intended voyage, according to the following scale :—

For every passenger per diem not less than—

Rice or bread stuffs	1½ lb.
Dried and/or salt fish	½ lb.
Chinese condiments and curry stuff	1 oz.
Fresh vegetables, which will keep for short voyages, such as sweet potatoes, turnips, carrots, and pumpkins	1½ lb.
Firewood	2 lb.
Water (to be carried in tanks or sweet casks).	1 gallon

or according to a scale at least equivalent to the foregoing.

AMOY.

Amoy, in lat. 24°30' N., long. 118°9' E., is situated upon an island separated by a narrow strait from the coast of Fukien. Distance from Liverpool by sea, 14,110 miles.

Population.—114,000.

Imports.—Kerosene, beans and bean cake, raw cotton, matches various food stuffs, dried and salt fish, rice, wheat, and flour.

Exports.—Earthenware, tea, sugar, sugar candy, paper, tobacco grass cloth, alum, gold leaf, etc.

China—Amoy (*continued*).

Accommodation.—There is no bar at the entrance of this port, and the largest vessels can enter at any state of the tide. The anchorage is on a rocky bottom on the S. side of the harbour in 14 fathoms, and on the N. side on a mud bottom in 7 to 8 fathoms, vessels loading and discharging by means of cargo boats. There are no quays. There is a dock 360 ft. long, and 60 ft. wide at the entrance, with a depth of 16 ft. 6 in. on the sill at high water, mean tides. There are workshops, machinery, and materials for repairs to steamships and sailing vessels. A small slipway for the repair of launches is situated on the island of Kulangsu, capable of taking vessels up to 115 ft. long and 16 ft. beam; depth of water at high tide, 12 ft.

Time Signals.—Chronometers can be checked here. Flag T of the International Code is hoisted on the flagstaff on N.E. slope of Wellington Nose, north point of Kulangsu, about 5 minutes before the signal. A gun is also fired at the Custom House at noon Amoy mean time, equal to 16 h. m. 43·8 s. Greenwich mean time. The flag is hauled down at the instant of the signal. The signal, which is made on Wednesdays and Saturdays, is reported as unreliable.

Pilotage.—Not compulsory, but advisable on account of rocks. Inside ground: Sailing vessels, entering or leaving port, docking, etc.—under 400 tons, 10 dols.; over 400 tons, 2½ c. per register ton. Steamers (ditto, ditto), under 650 tons, 10 dols.; over 650 tons, 1½ c. per register ton. Steamers not under steam to pay same as sailing vessels. Vessels of war to pay 1½ c. per ton of one-half of displacement tonnage.

Towage.—In and out of inner harbour, by steam-tug, 3 dols. each way; by sampans, 10 c. each. (Twenty sampans or more, according to the size of the vessel.)

Port Charges.—Tonnage Dues.—Vessels of 150 tons or under 4 mace per ton; vessels over 150 tons, 4 mace per ton. Coasting vessels and vessels plying to Manila, Singapore, Saigon, etc., pay tonnage dues once in four months. **Dock Dues.**—Per day, 200 tons gross, 80 dols.; 1,000 tons gross, 175 dols.; 2,000 tons gross, 225 dols. (Spanish currency). **Lightage.**—Tea, ½ c. per half chest; general cargo, 2 c. per package in large quantities. **Ballast.**—Sand, 20 c. (Mexican) per ton; stone, 50 c. (Mexican) per ton. **Stevedore.**—Loading or discharging, 20 c. per man per day. **Brokerage.**—2½ per cent. for procuring freight. **Water.**—50 c. per ton; in large quantities (3 tons), 1 dol. **Provisions.**—Good, and there are several ship-chandlers' stores.

Pro Forma Charges on a sailing vessel of 700 tons, entering with cargo of beans and food stuff, and leaving with general cargo:—

	Dols.	c.
Pilotage in from sea to outer harbour	6	00
Inner harbour pilotage, inwards	17	50
Tonnage dues	434	00
Consular fees	1	50
Stevedore's account (unloading), 12 men, 6 days	14	40
Stevedore's account (loading), 12 men, 6 days	14	40
Doctor's account	20	00
Agency commission	10	00
Ship-chandler's account	20	50
Water, 20 tons at 50 c.	10	00
Pilotage outwards, from outer harbour to sea	6	00
Inner harbour pilotage, outwards	17	50
Consular fees (clearance)	2	25

CANTON.

Canton, in lat. $23^{\circ}10'$ N., long. $113^{\circ}20'$ E., is situated on the Chukian, or Pearl River, about 88 miles from Macao, and 95 miles from Hong Kong by water. Shortest sea route by the Cape, 12,870 miles; by Suez Canal, 9,775 miles.

Population.—About 1,500,000.

Imports.—Opium, cotton and woollen piece goods, kerosene, coal, paper, silk, tea, etc.

Exports.—Raw and waste silk, matting, fire crackers, cassia, tea, wood-ware, china-ware, embroideries, curios, etc.

Accommodation.—Vessels of 1,000 tons can ascend as far as Canton, but almost all steamers lighten at Whampoa, below the barrier before proceeding, and for such cargo discharged a separate manifest is necessary for presentation to the Customs. The depth at the entrance to the port is 13 to 14 ft. at ordinary high springs. The depth in the port at ordinary springs is 24 ft. at high water and 18 ft. at low. There are several large wharves (privately owned), which can be reached at high water at ordinary springs by vessels drawing 12 ft. All sailing vessels anchor at Whampoa about 12 miles below Canton, to avoid the difficulties of navigating a crowded river. Steamers and sailing vessels (British) deposit their articles and register at Canton. The papers of a ship of any nationality not represented by a Consul are deposited with the Customs. Steamers and sailing vessels alike enter and clear at the Customs at Canton only. River steamers run twice daily between Canton and Hong Kong, and once daily between Canton and Macao. There is a safe and commodious anchorage within 150 yards of the river wall of the foreign settlement of Canton, and the anchorage at Whampoa, although only used by a few small sailing vessels, is spacious and well protected.

Pilotage.—Whampoa to Hong Kong, or vice versa: Vessels up to 16 ft. draught, 25 dols.; 17 to 19 ft. draught, 30 dols.; 20 to 22 ft. draught, 40 dols. Canton to Whampoa, or vice versa, any draught, 10 dols.

Port Charges.—**Tonnage Dues:**—4 mace (about 62 c. Mexican) per register net tonnage. These dues are paid once every four months, during which period a steamer can enter any Treaty Port in China without further payment. If a steamer is measured by the Chinese Customs and pays on such measurement (which seldom, if ever, exceeds English measurement), she can proceed to any part of the world, and still not pay tonnage dues on her return to China within four months. Tonnage dues include all harbour, light, and mooring dues. **Lighterage:**—From Whampoa to Canton, 2 to 4 c. per picul. **Discharging:**—Cost varies according to description of cargo, average 20 c. Mexican per ton of 40 cubic ft. **Ballast:**—Seldom needed, as vessels can usually get to Hong Kong without it. Urgently wanted, it is bought at Whampoa, at a charge of from 80 c. to 1 dol. per ton.

CHEFOO.

Chefoo, in lat. $37^{\circ}33'$ N., long. $121^{\circ}19'$ E., is situated on the northern side of the Shantung Promontory.

China—Chefoo (*continued*).

Population.—100,000.

Imports.—Cotton, paper, sugar, tobacco, shirtings, drills, sheetings, cotton yarn, iron (nail-rod and old), coal, matches, needles, kerosene, window glass, and flour.

Exports.—Beans, bean-cake, dates, silk, pongees, silk waste, raw silk, yellow silk, vermicelli, fresh fruit, etc.

Accommodation.—The harbour is very large and commodious, and has a depth of from 15 to 18 ft. in its inner portion, and from 26 to 30 ft. in the outer. It is completely sheltered from S., S.E., and S.W. gales, but in N., N.E., and N.W. gales a heavy swell rolls in, making the shipping and discharging of cargo impossible. At such times steamers can find good shelter under Chefoo Bluff, on the N. side of the harbour. Cargo has to be discharged into cargo boats, and to be landed for examination at the Customs jetty, alongside which there is 9 ft. at high water and 2 ft. at low water.

Time Signals.—Chronometers can be checked. A black ball, on a mast eastward of Tower Hill, 213 ft. above high water level, is dropped on Wednesdays and Saturdays at noon standard time of the China coast on the mean time of the meridian of 120° E. Local mean time is 0 h. 5 m. 34 s., corresponding to 16 h. 0 m. 0 s. Greenwich mean time. A gun is also fired. The signal is stated to be inaccurate.

Port Charges.—There are no pilotage, towage, harbour, quay, or light dues. **Tonnage Dues** :—Vessels over 150 tons, 4 mace per ton; vessels under 150 tons, 1 mace per ton; payable once in 4 months. **Coolie Hire** :—About 40 c. per man per day. **Ballast** :—From 40 c. to 6 mace per ton. **Cargo Boat Charges** :—For coal, 40 c. per ton; small packages, 5 copper cash each. **Water** :—The Water Company's boats supply fresh water at 1 dol. per ton. **Brokerage** :—5 per cent. on freight.

CHINKIANG.

Chinkiang, in lat. 32°14' N., long. 119°28' E., is situated at the junction of the Grand Canal with the Yangtse, 42½ miles below Nanking.

Population.—181,000.

Imports.—Cotton and woollen piece goods, metals, sugar, pepper, kerosene, etc.

Exports.—Hides, grain (to Chinese ports only), peas, beans, and ground nuts.

Accommodation.—Owing to changes in the river bed, steamers cannot approach within 500–600 ft. of the Bund. The depth of water at the receiving hulks (private) is about 20 ft. in winter, and 30 ft. in summer. A stock of inferior Japanese coal is kept. Railway communication with Shanghai and Nanking.

Pilotage.—To and from Shanghai, about 150 taels.

Port Charges.—**Tonnage Dues** :—4 mace per ton, every 4 months. **Stevedore** :—Loading and discharging, 9–10 Mexican c. per ton. Daily average work, 800 tons. **Provisions** :—Plentiful and cheap.

Expenses of a steamer loaded with 2,500 tons of grain for Hong Kong and Canton, 2,677 taels = £356 18s. 8d.

CHIN-WANG-TAO.

Chin-Wang-Tao, in lat. 39°50' N., long. 119°30' E., is on the Gulf of Pechili.

Population.—5,000.

Accommodation.—This port is always open to navigation, and during the winter months, when the rivers are closed by ice, the whole trade is carried on without interruption through this channel. The break water (total length, 2,300 ft.) has five berths, and can accommodate vessels up to 600 ft. in length. The depth alongside is 21 ft. at low water, and 26 ft. at high water, with soft mud bottom. At the pier there are berths for two steamers of 300 ft. each, and a low berth for lighters. The depth alongside is 17 ft. at low water, and 22 ft. at high water. Dredging operations are in progress to increase the depth to 25 ft. There is good sheltered anchorage for vessels unable to reach the wharves on account of draught. Labour is plentiful and every facility present for discharge of cargo, including weights up to 20 tons, direct on to railway cars. Chin-Wang-Tao is the shipping port for coal from the Kaiping Collieries owned by the Chinese Engineering and Mining Co., Ltd., and good bunker coal, also fresh water and provisions, are obtainable. Railway connection with Tientsin, Peking, Newchwang, Mukden, etc.

Port Charges.—Wharfage:—Vessels loading or discharging mixed cargoes, 275 ft. over all, 100 taels; over 275 ft., 120 taels; loading coal, up to 300 ft., 80 taels; over 300 ft., 100 taels. Vessels remaining at the wharf more than 3 days pay an extra charge of 40 taels for the first day and 50 for each succeeding day. Vessels calling to bunker only, free. **Agency** for Custom House business, 25 taels per steamer. **Stevedoring:**—Discharging cargo from vessels on to cars and loading from cars into vessels, 3 candareens per package; extra large or small packages will be charged according to size or weight. Charge per lift for handling machinery and heavy weights, 1 ton, 5 taels; and so on to 15 tons, 100 taels.

Pro Forma Charges on a steamer staying nine days in Chin-Wang-Tao:—

	Taels	c.	Mexican Dols.	c.
Wharfage	460	00	—	—
Agency fee	25	00	—	—
Consular fee	—	—	5	00
Customs fee for endorsing ship's articles	—	—	3	00
Ship chandler's account	—	—	152	58
Medical fee	—	—	40	00
Repairs to machinery	—	—	146	71
Cash advance	—	—	200	00
Water, 7 tons at 1 dol. 50 c.	—	—	10	50
Tonnage dues, 970.40 H.K. taels	—	—	1,455	60
Pilotage	—	—	51	00
Special permit fees:—				
7 nights at 10 taels	H.K. taels	70		
1 Sunday at 20 taels	H.K. taels	20		
1 Sunday night at 20 taels	H.K. taels	20		
	H.K. taels	110	—	165 00
Telegrams			30	90
Stevedoring, 4,238–5,862 pkgs. Imp. cargo at 3 cands	175	86	—	—
Stevedoring, 39,376–16,522 piculs Imp. cargo at 3 cands	495	66	—	—
Handling charges, on 175–320 pkgs. cwt. ammunition at 2 cands	6	40	—	—
Carried forward.	1,162	92	2,260	29

China—Chin-Wang-Tao (*continued*).

	Taels.	c.	Dols.	Mexican c.
Brought forward.	1,162	92	2,260	29
Handling charges on 73-134 pkgs. ammunition (ex godown to car)	2	68	—	—
Railage on tons 10 c.c. powder car at dangerous rate at 19-80 per ton to Tientsin	—	—	198	00
Railage on Tientsin through cargo on tons 610 c.c. at 3 tls.	1,830	00	—	—
Hotung yard dues (Tientsin) on 620 tons c.c. at 10 cands	62	00	—	—
Haulage (from wharf to godown or vice versa) on 30 tons c.c. at dangerous rate at 1 dol. 80 c.	—	—	54	00
Haulage on 1,174 tons c.c. cement works cargo at 30 c.	—	—	352	20
Pier dues on 1,204 tons c.c. at 40 c.	—	—	481	60
Permit fee for working from midnight to 4 a.m., 10 taels	—	—	15	00
15 watchmen to Tientsin and return railway fare at 6 dols. 70 c.	—	—	87	10
Service allowance on 2 days at 2 dols. per man per day	—	—	52	00
Handling charges (discharging at Hotung yard), 4,238-5,862 pkgs. Tientsin Imp. cargo at 2 c.	—	—	117	24
	3,057	60	3,617	43 = £768 8s. 5d.

FOOCHOW.

Foochow, in lat. 26°6' N., long. 119°20' E., is about 500 miles from Hong Kong, on the left bank of the River Min, about 27 miles from its mouth. Distance from Liverpool by the Cape, 14,230 miles; by Suez Canal, 10,170 miles.

Population.—624,000.

Imports.—Beche-de-mer, cotton and woollen manufactures, kerosene, metals, rice, sugar candy, opium, etc.

Exports.—Tea, paper, tobacco, bamboos, oranges, sugar, spices, and timber.

Accommodation.—The anchorage used by vessels known as the Pagoda anchorage is about 9 miles below the city, off the S. point of Losing Island or Pagoda Island. Depth on the bar at high water, ordinary springs, 29 to 30 ft.; ordinary neaps 24 to 26 ft. Depth available inside port at ordinary springs high water, 52 to 58 ft.; low water, 36 to 42 ft. There are no wet docks, quays, etc., at the Port, nor any cranes or similar appliances. There is good holding ground, though the tides are strong. Loading and discharging are done by means of covered cargo boats. There is a jetty 150 ft. long at the Government Arsenal, with iron sheers at end capable of lifting 60 tons. Vessels drawing 15 or 16 ft. can remain afloat at low water. The channel leading to the Arsenal, however, has only 23 ft. at high water. At the Pagoda anchorage there is a Government dry dock 354 ft. long over all, 9 ft. wide at entrance on the sill, and 26 ft. deep on the sill at high water ordinary springs. There is also an old dry dock, 350 ft. long, 44 ft. wide on sill and 18 ft. deep on sill. There is a Government patent slip to raise vessels up to 1,600 tons broadside on. There is a very fine Government shipbuilding yard, where building and repairs are executed. Sheer legs to lift 70 tons.

Pilotage.—Between the limits of the outside pilotage ground, for all vessels, 4 dols. a foot. Steamers for Pagoda anchorage to sea, and vice versa, if drawing 18 ft. and under, 5 dols. a foot; if drawing more than 18 ft., 6 dols. a foot. Between Sharp Peak and Pagoda anchorage, for all vessels, 2 dols. a foot. Sampan, if employed between the Pagoda and Sharp Peak, for towing, 50 c. each. Coolies, if employed between the Pagoda and Sharp Peak, for working ships, 1 dol. each. Between Pagoda anchorage

China—Foochow (*continued*).

and Foochow Bridge, for all vessels, 1 dol. 50 c. a foot. For vessels in tow of steamers, inside pilotage, 1 dol. a foot; outside pilotage, 2 dols. a foot; provided said steamer is of sufficient power to tow against the tides and ordinary wind, otherwise the full pilotage will be charged, namely, outside, 4 dols.; inside, 2 dols. a foot.

There is a competent staff of European and American pilots for the outside navigation, and of Chinese for the river.

The pilotage service is under the control of the harbour master, a European in the pay of the Chinese Government, who resides at Pagoda anchorage. The number of pilots for the port of Foochow is 10 outside and 15 inside (European and Chinese).

Port Charges.—Tonnage Dues :—4 mace per ton every 4 months.
Stevedore Charges :—Discharging—coal, 10 c. per ton; sand or mud ballast, 18 c. per ton; stone, 16 c. per ton. To supply and deliver on board—sand ballast, 22 c. per ton; stone ballast, 30 c. per ton; tea ballast, 50 c. per ton; stowing tea, from 13 to 15 c. per ton, according to exchange; dunnage mats, 3 dols. per 100; bamboo mats (10 ft. long), 2 dols. per 100.

Pro Forma Charges on a steamer of 3,031 tons, loading 990 tons 40 c. a foot, tea for New York :—

		Dols.	c.
Stevedore, 990 tons at 13 c.	128 dols. 70 c.		
Stevedore, 2,000 dunnage mats at 2 dols. 20 c.	44 dols. 00 c.	172	70
Pilotage in, 18 ft. at 6 dols.	108 dols.		
Pilotage out, 20 ft. at 7 dols.	140 dols.		
		248	00
Customs, overtime permit, 10 taels		15	38
Bill of health, Port Health Officer		30	00
Bill of health, U.S. Consul		4	75
	<i>s. d.</i>		
Consular fee, entrance and clearance	10 0		
Consular fee, ship's articles	2 6		
	12 6 =	5	56
Launch hire to anchorage, two trips		24	00
Shipping report arrival and departure		4	00
		504	39
Commission, 2½ per cent.		12	61
		517	00 = £51 14s. 00

HANKAU.

Hankau, in lat. 30°33' N., long. 114°22' E., is on the left bank of the Yangtse, 384 nautical miles from Nanking, and 600 miles from the sea.

Population.—778,000.

Imports.—Piece goods, opium, lead, quicksilver, tin, silk, medicines, cuttle fish, sugar, and cotton.

Exports.—Tea, oil, raw silk, cotton, rhubarb, paper, tobacco, tallow, varnish, coal, charcoal, fungus, gypsum, hemp, lotus seeds, nankeen planks, timber, safflower, opium, sesame seeds, ores, skins, hides, and pig iron.

Accommodation.—The maximum depth of water available for vessels proceeding to this port usually occurs in August, and generally varies from 40 to 45 ft. The greatest depth on record is 48 ft. 3 in. After August the available depth gradually declines until February, when there is only

China—Hankau (*continued*).

or 9 ft. in the channels. Thus, during the winter months, only light draught steamers (about 9 ft.) ply on the river. After April the water rises considerably, and ocean steamers drawing 20 to 24 ft. have no difficulty in reaching Hankau. The anchorage is bad, from the force of the current, and what is called the chow-chow water, caused by the confluence of the two rivers, and unless great care is taken to raise the anchors from time to time, there is great probability of their being lost, sandbanks forming over them. The anchorage for small native craft is up the Han River, but for the convenience of loading, all steamers have to anchor in the stream of the Yangtse; the river steamers loading and unloading alongside 10 hulks or pontoons moored off the shore, and connected therewith by movable stages. These hulks are owned by steamship companies. The port is frequented by six lines of steamers plying between Shanghai and Hankau, also by frequent coasting steamers to and from Swatau. The "Blue Funnel" line (A. Holt & Co.) are opening a regular monthly service between Hankau and European ports. The Hamburg-American line already have such sailings. Hankau is of growing importance; it has received a great impetus by the construction of the railway to Peking. A continuation of this line is projected to Canton, and a line linking Hankau with Nanking is also contemplated.

Pilotage.—Steamers proceeding to Hankau engage a pilot at Shanghai.

Port Charges.—Tonnage Dues:—See **China. Water:**—Free.

Provisions:—Bread, 14 to 16 loaves of 1 lb., 1 dol.; beef, 7 c. per lb.; firewood, $\frac{1}{2}$ tael per picul. **Coal:**— $7\frac{1}{2}$ to $8\frac{1}{2}$ taels per ton, in small quantities; above 50 tons, 7 to 8 taels per ton.

LOCAL REGULATIONS OF THE PORT.

1. No loading or discharging of cargo from British vessels may be carried on except within the limits of the anchorage defined by the Consul and Chinese authorities.
2. Masters of British vessels will be held accountable for the conduct of their crews on shore. Sailors landing on liberty from British vessels are strictly prohibited from remaining the night on shore, neither are they permitted to wear knives or carry arms of any description. Should any seaman absent himself without leave, the master shall forthwith report the same at the Consulate Office, and take efficient measures for the recovery of the absentee.
3. The discharge of guns or other firearms from British vessels in harbour is strictly prohibited, under a penalty not exceeding 50 dols.
4. All cases of death occurring on board of vessels in harbour, or in the residence of British subjects on shore, must be immediately reported at the Consulate Office; and in the event of sudden or accidental death, the best information obtainable will likewise be required. It is strictly prohibited to throw overboard the bodies of seamen or other persons dying on board of a vessel in harbour.
5. All cases of loss of property by theft or fraud on board ship, as well as of assaults and felony, requiring redress or involving the public peace, must be immediately reported at the Consulate Office. Any Chinese subject guilty of a misdemeanour on shore or afloat may be detained on detection, but information must, in such case, be forthwith lodged at the Consulate Office; and in no instance shall British subjects use violence towards Chinese offenders, or take the law into their own hands.

China—Hankau (*continued*).

6. When a vessel is ready to leave the port or anchorage, the master shall give notice thereof to the Consulate, and shall hoist a blue peter at least 24 hours before the time appointed for her departure. In like manner the master shall apply at the Consulate for permission, when desirous of shifting his vessel's berth from one part of the port to another.

HOIHOW.

Hoihow, in lat. 19°57' N., long. 110°10' E., is the port of Kiungchow, the prefectural city of Hainan, which was nominally opened to foreign trade by the Tientsin Treaty of 1858 between Great Britain and China. The port was not formally opened until April, 1876, when a British Consul was appointed. It is a port of call for steamers passing through the Hainan Straits.

Population.—Hoihow, 30,000 ; Kiungchow, 40,000.

Imports.—Cotton, yarn, piece goods, kerosene, opium, and Japanese matches.

Exports.—Live pigs, fowls, eggs, sugar, sesame seed, cow hides, horns, tallow, betel nuts, galangal, ground-nut cake, grass cloth, hemp, and Chinese sundries.

Accommodation.—Holding ground in Hoihow Bay is good but shallow, with a bottom of mud and sand. The anchorage for vessels drawing 12 to 15 ft. is from half to three-quarters of a mile from the sand spit ; lighter draught vessels can come closer in. It is about 2 miles from the sand spit to the town of Hoihow. Inside the sand spit it is nearly dry at low water. The rise and fall of the tide is about 6 ft. Boats have to watch the tide to go in or out, and loading and discharging is carried on accordingly. Tides inside the sand spit are irregular from local causes ; usually there is one tide every 24 hours. Native boats—open, flat-bottomed, with a centre-board carrying from 3 to 10 tons d.w.—are used. They are good, serviceable craft and well managed.

A considerable Chinese passenger trade exists between Hoihow, Singapore, and Bangkok, and a regular coasting trade for steamers is carried on between Hong Kong, Hoihow, Pakhoi, and Haiphong. There is a large Chinese passenger trade between Hoihow and Hong Kong, and the Hoihow cargo trade is almost entirely confined to Hong Kong.

Telegraphic communication is established by means of the Imperial Chinese Government wireless system, which connects with the land line to Hong Kong, via Canton. A large stock of coal is not kept, owing to the war of a demand, but steamers can generally be supplied with sufficient to take them to Hong Kong.

Pilotage.—There is no regular pilot service. Chinese pilots of some experience are obtainable at Hong Kong. The ordinary charge is 6 dol. for piloting a steamer from Hong Kong to Hoihow.

Port Charges.—Tonnage Dues :—4 mace (about 60 c. Mexican) per reg. ton, payable every 4 months. Permits to work at night and on Sundays are granted free at this port. There are no other port dues.
Stevedorage :—Reckoned by the package, 1 c. to 1½ c., or by the day, 3 coolies for 1 dol., according to circumstances. **British Consular Fee :**—Entry and clearing, 5s. **Emigration Fee :**—Certificates, 25 dols. Mexican. **Bill**

China—Hoihow (continued).

Health :—10s. **Water** :—A proper water boat supplies good fresh water alongside at 60 c. per ton. Provisions are obtainable from Chinese store-keepers at moderate prices.

KIUKIANG.

Kiukiang, in lat. $29^{\circ}40'$ N., long. $116^{\circ}5'$ E., is situated about 14 miles above the entrance of the Poyang Lake. It is 455 miles from Shanghai, and 137 from Hankau.

Population.—About 36,000.

Imports.—Textile fabrics, opium, etc.

Exports.—Tea and tea dust.

Accommodation.—The holding ground at the anchorage is bad, the river is deep and rapid, and the strong N.E. winds cause much sea. Good coals can be purchased.

NANKING.

Nanking, in lat. $32^{\circ}1'$ N., long. $118^{\circ}53'$ E., is 193 miles from Shanghai, and 235 miles from the sea. This Treaty Port was opened to trade in May, 1899.

Population.—267,000.

Imports.—Cotton piece goods, cotton yarn, copper, coal, opium, kerosene, sugar, etc.

Exports.—Beans, peas, silk piece goods, skins, sesame seed, medicines, etc.

Accommodation.—Vessels drawing 25 ft. can ascend as far as this port, where there is ample room and accommodation. Railway connection with Shanghai is via Chinkiang and Foochow.

Pilotage.—All steamers carry a pilot from Shanghai.

Port Charges.—**Tonnage Dues** :—4 mace per ton, payable every 4 months. Vessels under 150 tons, 1 mace per ton. **Wharfage** :—2 per cent. on the duty paid (about 1 per mille *ad. val.*). **Consular Fees** :—The usual.

NEWCHWANG.

Newchwang is a small city on the River Liau, at the head of the Gulf of Liau-Tung, about 30 miles above the entrance. Lat. (entrance buoy) $40^{\circ}35'$ N., long. $121^{\circ}58'$ E. Yingkow or Yingtse, about 15 miles from the entrance, is the port of Newchwang.

Population.—74,000.

Imports.—Opium, sugar, cotton, woollen goods, metals, American piece goods, flour, and kerosene.

Exports.—Beans, bean-oil, bean-cake, castor oil, brown silk, hemp, tobacco, felt, indigo, furs, hides, etc.

Accommodation.—The anchorage is opposite the town, about 800 yards wide, with 30 to 60 ft. of water ; it lies nearly east and west, and vessels can, therefore, load and discharge during either monsoon. The least depth of water on the bar at low spring tides is $7\frac{1}{2}$ ft. ; springs rise 11 or 12

China—Newchwang (*continued*).

ft., and neaps 7 or 8 ft. The prevailing winds during the open season are from the S.W., or direct in, varied with an occasional north wind, and, as the north winds retard the flow of the tides considerably, vessels of 16 ft draught sometimes suffer detention when bound out in the late fall, whilst vessels of 14 or 15 ft. seldom have any difficulty. There is a berth for one vessel alongside a quay which is about 260 ft. long. There are six wharves, one belonging to the Imperial Chinese Railway with a low water depth of 14 to 18 ft. ; the others belong to private firms, and have a low water depth of 12 to 16 ft. Railways connect with Tientsin, Pekin, Dalny, and Port Arthur, and with the interior of Manchuria and Siberia. Important railway developments will very shortly take place, and vessels will be able to come alongside and discharge their up-country cargo into trucks. There are no docks, but vessels (particularly iron vessels) are frequently beached on the north bank of the river for cleaning and repairs. During winter months small gunboats can be docked in mud-docks constructed for the purpose. The port may be considered free from ice from March 20 to November 15, and vessels arriving sooner, or stopping later, run great risk, as the ice comes down without warning.

It is not advisable for vessels to visit Newchwang unchartered, as it seldom proves advantageous. The vessels requisite for the trade are generally chartered by the agents at the southern ports, and as Newchwang is the last port in that direction, they must accept what offers, or go back empty. This captains are loth to do, particularly after incurring pilotage expenses inwards. However, vessels may ride outside in safety, and captains wishing to try the market may come to anchor outside and proceed to town in their own boats with the flood tide. Should no inducements offer, they can generally get back without difficulty, and thus lose no time, and, as a rule, will generally make the best bargain by keeping the vessel outside.

The navigation of the Gulf of Liau-Tung is very simple, and, with ordinary precaution, accidents should be rare. Several accidents have occurred through captains giving the Bittern shallows too wide a berth, and not hauling sufficiently to the eastward after rounding them. The landmarks are easily made out, and as nothing lies off shore after rounding the Bittern shallows, vessels cannot haul too much to the eastward, more particularly with a flood tide, which sets strongly to the westward. It is no uncommon thing for strangers to find themselves 10 or 15 miles to the westward of their reckoning, surrounded with sandbanks ; whilst by keeping to the eastward they have nothing to fear but the mainland, which may be approached with safety into 5 fathoms.

Time Signals.—Chronometers can be checked. A ball on the Custom House flagstaff is dropped at noon standard time of the China coast on the mean time of the meridian of 120° E. The local mean time would be 0 h. 9 m. 3.7 s., corresponding to 16 h. 0 m. 0 s. Greenwich mean time.

Pilotage.—Steamers, 4 taels, and sailing vessels, 5 taels per foot.

Port Charges.—There are no local charges on vessels. The tonnage dues, which are 4 mace per ton, are paid once every 4 months, an enable vessels to trade to all or any of the Treaty Ports in China. Cargo is always taken out and put on board by the charterer. **Discharging Ballast:**—35 c. per ton. **Consular Fees:**—6 dols. 25 c. **Doctor's Fees:**—10 dols (optional). Supplies of all kinds are plentiful and cheap. Extra dues are levied by the harbour authorities for night, Sunday, and holiday permit

China.

NINGPO.

Ningpo, in lat. $29^{\circ}51' N.$, long. $121^{\circ}32' E.$, is situated on the river Yung, about 13 miles from the entrance.

Population.—260,000.

Imports.—Cotton and woollen manufactures, opium, metals, sugar, sugar candy, kerosene, etc.

Exports.—Tea, raw cotton, matting, hats, fans, cuttle fish, medicines, etc.

Accommodation.—Vessel of 17 ft. draught can ascend as far as Ningpo during spring tides. Depth in port at ordinary springs, high water, 5 ft.; low water, 27 ft. Vessels are loaded and discharged at private wharves, and by lighters. Good holding ground. There are no docks or shipbuilding yards in this vicinity. It is high water at 0 h. 40 m., and springs rise 10 ft. At Chin Hai, a city on the western side of the mouth of the river, it is high water, full and change, at noon, and springs rise $12\frac{1}{2}$ ft.

Pilotage.—A European pilot can be obtained at Ningpo. It is better to write and engage him beforehand. The rates of pilotage are 3 taels 75 c. (about 5 dols. Mexican) per foot, from Square Island to Ningpo, and vice versa, for steamers and sailing vessels. From or to Chusan the pilotage is by agreement.

Port Charges.—**Tonnage Dues**:—Vessels over 150 tons, 4 mace per ton. **Wharf Dues**:—3 cash per package. No harbour, quay, light, or health dues are levied at Ningpo. **Ballast**:—Stone, 75 c.; mud ballast, 9 c. per ton, delivered on board. **Water**:—Brought alongside in water-boats, 75 c. per 300 gallons. **Stevedore**:—30 c. per man. **Cargo Boat Hire**:—1 dol. per day for large boats; smaller boats in proportion. Provisions to be had at reasonable prices. **Agent's Fee**:—Entrance and clearance, 100 taels. **Consular Fees**:—5 dols. for foreign vessels; British ships, 12s. 6d. for entrance and clearance. If paid every 3 months, £5.

PAKHOI.

Pakhoi, in lat. $21^{\circ}29' N.$, long. $109^{\circ}7' E.$, is the port for the city of Lienchow. It was opened to foreign trade in April, 1877.

Population.—About 20,000.

Imports.—Cotton yarn and piece goods, kerosene, flour, and hemp.

Exports.—Hides, indigo, sugar, pigs, fish, and lung-ngan pulp.

Accommodation.—The anchorage is good and safe in any weather. Vessels anchor abreast of the Custom House in 4 fathoms, about a mile and half from the town. The depth of water in the harbour is: Highest, 36 ft.; lowest, 18 ft.; entrance to the port, 18 ft. Supplies may be obtained at moderate prices. The climate is considered to be good. All the trade is done by local steamers.

Port Charges.—**Tonnage Dues**:—60 c. (Mexican currency) per register ton, every 4 months. **Consular Fees** (British):—Entrance, 2 dols. 50 c.; clearance, 3 dols. 25 c. **Ballast**:—Sand, 70 c. per ton. **Coolie Hire**:—Loading and discharging cargoes (work done on board of the steamers): Large packages, including piece goods, sugar, indigo, and cow hides, 2 c. each; kerosene, two cases, 2 c.; flour, 4 bags, 2 c. **Cargo Boats**:—Carrying cargo to

China—Pakhoi (*continued*).

and from the steamer : Large packages, 4 c. each ; small packages, 2 c. each. **Coolie Hire** :—Carrying cargoes to and from Customs examination shed to sampans (expenses paid by the merchants) : Piece goods and other large packages, 6 c. each ; indigo, 3 c. each ; cow hides, 3 c. each ; other cargoes up to 130 catties weight, 4 c. **Sampan Hire** :—From cargo boats to Customs examination shed : During fine weather, each way, 4 c. per package ; during rough (rainy, etc.) weather, each way, 10 to 20 c. per package.

SHANGHAI.

Shanghai, in lat. $31^{\circ}17' N.$, long. $121^{\circ}27' E.$, stands on the left bank of the river Whangpoo, 12 miles above the entrance. Distance from Liverpool by the Cape, 13,561 miles ; by Suez Canal, 10,475 miles.

Population.—651,000.

Imports.—Cotton and woollen manufactures, sugar, etc.

Exports.—Tea, silk, cotton, gold, etc.

Accommodation.—Vessels drawing more than 22 ft. can rarely cross the bar, and have to discharge their cargo outside Woosung into lighters, of which there is a fine fleet owned by the Shanghai Tug and Lighter Company, Ltd., under European management ; the boats so employed vary in size from 100 tons to 500 tons capacity.

The harbour is divided into nine sections, in which vessels lie three abreast.

In the port there is a depth of 31 ft. at high water and 21 ft. at low ordinary springs in the shallowest berthing spaces for deep draught ships. The holding ground is fair. There are numerous wharves, principally owned by private firms, and a few cranes.

The following are the dimensions of the dry docks :—

Dock.	Length over all in feet.	Width of Entrance at High Spring Level in feet.	Depth on the Sill at High Springs in feet.
Cosmopolitan	560	77	24
International.	540	77	23
New	473	74	22
Old	400	53	16
Tunkadu	362	67	16
Kiangnan (Provincial Government)	390	70	19

The Government have a dockyard with 75 ton sheers, and there is also private yard where vessels of 2,500 tons are built. There are sheers in the yard to lift 75, 65, 60, 60, 40, 30, and 20 tons respectively. All repairs can be done.

Time Signals.—Chronometers can be checked. A ball is hoisted half-mast at the semaphore at the French Concession at 11.45 a.m., closed up at 11.50, and dropped at 11 h. 55 m. 0 s. a.m. ; it is again immediately hoisted close up and dropped at noon standard time of the 120th meridian east longitude, equal to 16 h. 0 m. 0 s. Greenwich mean time, and 0 h. 51 m. 56.7 s. local mean time.

Pilotage.—Pilots are always in attendance at the entrance, and

China—Shanghai (continued).

vessel should attempt to enter without one, as the shoals are constantly changing.

Every pilot boat is to hoist a red and white flag, horizontal, on which the number of his boat shall appear in black.

PILOTAGE RATES.

	Sailing vessels per foot. Tael c.	Steamers per foot. Tael c.	Tonnage charge per ton on each ton over and above 1,500 tons net reg. Tael c.	
			Tael	c.
Gutzlaff to or from Shanghai	7 00	5 50	0	01
Tungsha	6 50	5 50	0	01
Woosung	2 50	2 50	0	005
Gutzlaff	5 00	4 00	0	0075
Tungsha	4 50	4 00	0	0075

Shifting vessels in port, including mooring and unmooring, going to or from a wharf, buoy, or dock, 1 tael 25 c. per foot, plus 25 c. per foot per mile. Parts of a mile to count as a mile.

Every pilot on board a ship shall produce for the inspection of the master his licence as a pilot.

Port Charges—Tonnage Dues :—45 c. per net reg. ton. **Stevedore :—**14 taels per 100 tons. **Wharfage :—**65 c. per foot on steamer's length. **Consul's Fees :—**10 dols. **Bill of Health :—**5 dols. **Water :—**50 c. per ton. **Lighterage :—**Rates vary according to size of lighter, from 15 taels 50 c. for 100 ton boat, to 50 taels for a 500 ton boat per day; or arrangements can be made by the ton.

Supplies of all kinds can be obtained at moderate prices.

The depth on the bar is shown by signals.

SWATOW.

Swatow, in lat. 23°24' N., long. 116°40' E., is the port of Chaochou Fu, on the river Han, about 180 miles N. of Hong Kong.

Population.—67,000.

Imports.—Opium, piece goods, bean cake, peas, medicines, and rice.

Exports.—Sugar, paper, fruit, grass cloth, tobacco, and earthenware.

Accommodation.—The town and anchorage are some 7 miles from the mouth of the river, at which is Double Island, once the European settlement, but now, save as a pilot and Customs station, deserted. The depth on the bar at low tides is 16 ft.; rise and fall, 8 to 9 ft. Vessels of 13 to 14 ft. draught can enter at any time of the tide with safety in fine weather if there is no ground swell. Swatow can be reached, at high water springs, by vessels drawing 22½ ft. during N.E. monsoons, and 21½ ft. during S.W. monsoons. The wharves, of which there are five, are owned by private steamship companies, but can be hired when vacant. They accommodate steamers 250 to 280 ft. long and drawing 19 to 21 ft. The entrance to the port is easy, but most vessels take a pilot. It is good policy for a stranger to do so, for although the dangers to which a vessel is exposed are few and easily learnt, they are at the same time serious. The length of voyage is 3,000 ft., with a depth alongside at ordinary springs of 7 ft. at high tide and nil at low. There is a stock of about 3,000 tons of coal kept, and steamers drawing 18 to 21 ft. can coal at the wharves or by lighters. Provisions are plentiful and cheap. Steamship communication with Hong

China—Swatow (*continued*).

Kong, Foochow, Amoy, and Shanghai. Railway communication with Chaochou Fu. Small repairs to ships, spars, etc., can be executed by Chinese contractors.

Time Signals.—Chronometers can be checked. A ball is hoisted on a flagstaff on the Harbour Master's Office, 121 ft. above high water level, and dropped at noon China coast standard mean time, equal to the mean noon of the meridian of 120° E. corresponding with 23 h. 46 m. 42 s. local mean time, and 16 h. 0 m. 0 s. Greenwich mean time. A gun is also fired. The signals cannot be depended on.

Pilotage.—5 dols. per foot.

Customs and Tonnage Dues.—Same as at other ports in China.

Pro Forma Charges on a steamer of 2,000 net tons, arriving at Swatow with coal and general cargo :—

	Dol.	c.
Chinese tonnage dues, Haikwan taels 800	1,222	22
Pilotage in, 21 ft. at 5 dols.	105	00
Pilotage out, 17 ft. at 5 dols.	85	00
Consular fees	10	00
Doctor's fee.	10	00
Stevedorage, 2,500 tons coal at 12 c., 300 dols.	390	00
" 500 tons general cargo at 18 c., 90 dols.	10	00
Water, 20 tons at 50 c.	5	00
Sampan at 1 dol. per day	15	00
Telegram	5	00
Postages and petties		
	1,857	22
Commission, 2½ per cent. on disbursements	46	43
Agency fee	100	00
	146	43
	2,003	65 = £200 7s. 3d.

TIENTSIN.

Tientsin, in lat. 39°4' N., long. 117°5' E., is situated at the junction of the Grand Canal and the Pei-ho. The city lies 51 miles from the bar at Taku, and the British settlement lies 3 miles below the city.

Population.—750,000.

Imports.—Piece goods, yarn, kerosene, and sundries.

Exports.—Wool, hides, skins, bristles, straw, and braid.

Accommodation.—The limits of the anchorages within which vessels may discharge or ship cargo are—At Tientsin : From the Rue de France, French Concession, on the north to the lower side of the village of Siao-sun-chwang on the south. At Tangku—From the lower end of the village of Tangku to the Forts at the mouth of the river. Outside the bar—From the outer part of the bar to a distance seaward of 3 miles. Only when vessels are of too deep a draught to cross the bar will permission be granted to load or discharge outside. The distance from the outer entrance of the channel across Taku bar to the mouth of the river (North Fort) is 5·5 nautical miles (1 mile = 6,080 ft.). The distance from the inner entrance of the channel across Taku bar to the mouth of the river is 3·5 nautical miles from North Fort to Tangku Customs station, 4·2; to Tangku railway station, 4·6; to Hsinho railway wharf, 7; to Luhan railway wharf, 7·5.

China—Tientsin (continued)

to Tientsin harbour master's office, British Bund, 40.9. The bar tides on the old channel now vary from 5 ft. 6 in. to 13 ft. 6 in., and average 9 ft. to 9 ft. 6 in. The tides on the new channel raked experimentally across the bar are from 2 to 3 ft. deeper, according to the season. The lowest tides occur in the months of July and August. Crossing the bar at high water enables a steamer to use the same tide right up to Tientsin. The time the tide takes to reach Tientsin is 5 hours, almost exactly the time required by a steamer to get up the river. The British Bund at Tientsin is about 3,500 ft. long. The French Bund, adjoining the British Bund, higher up the river has about 1,000 ft. of river frontage, which might be used for berthing small steamers. On the German Bund, adjoining the British Bund, down the river, a new wharf 350 ft. long has just been built. Opposite the British Bund on the Hotung side of the river two wharves belonging to the Tientsin Wharf and Godown Co. have been constructed, each 200 ft. long. The Peking Syndicate also have a wharf on this side of the river, with a coal yard adjoining, into which a railway siding has been run. A pair of sheer legs capable of lifting up to 30 tons have been erected on the British Bund. There are several private wharves at Tangku belonging to the China Railway Co. (600 ft. long); China Engineering and Mining Co. (1,050 ft. long); China Merchants' S.N. Co. (720 ft. long), and the "Docks et Appontments de Tangku" (400 ft. long). The workshops of the Tientsin Lighter Co., Ltd., have a dry dock with 450 ft. of blocks. The workshops of the "Docks et Appontments Tangku" and those of the Taku Tug and Lighter Co., Ltd., Taku, are capable of executing such repairs to vessels as are required generally. A new dry dock has been constructed by the "Docks et Appontments de Tangku."

Pilotage.—

From outside the bar to Pilot Town (mouth of river)—

Sailing vessels	Tientsin taels, 5 per foot.
Steamers or vessels in tow	" " " 4 " "
To any point above Pilot Town up to Hsinho Wharves the charge is 1 Tientsin tael more per foot.	

From Pilot Town, Taku, Tangku, and Hsinho wharves to Tientsin—

Sailing vessels	Tientsin taels, 6 per foot.
Steamers or sailing vessels in tow	" " " 5 " "

Shifting vessels in port, i.e., outer anchorage, Taku, and Tangku, including shifting a vessel from any point between the mouth of the river and the Tangku wharves up to the wharves at Hsinho, 15 taels, together with one tael cent for every ton over 1,200 tons net register. Boarding a vessel within the 5 miles limit outside the bar and anchoring her in the outer anchorage, 2 taels per foot draught, excluding such vessels as have to anchor to wait for high water to cross the bar. For detention at Tientsin over 36 hours, the pilot is entitled to 15 taels per day of 24 hours. For vessels of over 1,200 tons net register a tonnage charge of 3 tael cents for every ton over the 1,200 tons is levied.

Port Charges.—Tonnage Dues :—4 mace per reg. ton (payable once in 4 months). **Mooring Fees :—**4½ c. per net reg. ton. **Lighterage :—***Imports*—General cargo—Taku Bar to Tientsin, 1 dol. per ton of 40 cubic ft.; Taku Bar to Tientsin, 6½ c. per picul; Taku Bar to Tangku, 80 c. per ton of 40 cubic ft.; Taku Bar to Tangku, 5 c. per picul. Railway material—up to one ton, Taku Bar to Tangku or Hsinho, 1 dol. 75 c. per ton (2,240 lb. or 40 cub. ft.). Taku Bar to Tientsin, 2 dols. per ton. Over 1 ton and under

China—Tientsin (*continued*).

2 tons, Taku Bar to Tangku or Hsinho, 1 dol. 85 c. per ton; Taku Bar to Tientsin, 2 dols. 25 c. per ton. Over 2 tons and under 5 tons, Taku Bar to Tangku or Hsinho, 2 dols.; Taku Bar to Tientsin, 2 dols. 50 c. per ton. Over 5 tons, Taku Bar to Tangku or Hsinho, 3 dols. per ton; Taku Bar to Tientsin, 4 dols. per ton. Cement—Taku Bar to Tangku or Hsinho, 20 c. per cask up to 400 lb. gross; Taku Bar to Tientsin, 25 c. per cask. Lumber—Taku Bar to Tangku or Hsinho, 1.75 taels per 1,000 sup. ft.; Taku Bar to Tientsin, 2.75 taels per 1,000 sup. ft. Sleepers (Japanese)—Taku Bar to Tangku or Hsinho, 6½ c. per sleeper; Taku Bar to Shin Shui Ku, 7 c. per sleeper; Taku Bar to Tientsin, 8 c. per sleeper. (These rates include coolie hire at Taku Bar. Special arrangements must be made with the Commissioner of I.M. Customs before lighterage to Shin Shui Ku can be undertaken.) Foochow poles—per lighter registered tons, 1 dol. 30 c. per ton reg. or 2.75 taels per 1,000 sup. ft. Coal—Taku Bar to Tangku or Hsinho, 1 dol. per ton; Taku Bar to Tientsin, 1 dol. 25 c. per ton. (These rates include coolie hire at Taku Bar.) Kerosene—Taku Bar to Tangku or Hsinho, 5 c. per case; Taku Bar to Tientsin, 6½ c. per case. **Exports.**—Tientsin to Taku Bar or Tangku, 1 dol. per ton measurement; Tientsin to Tangku, 6½ c. per picul; Tangku to Taku Bar, 80 c. per ton measurement; Tangku to Taku Bar, 50 c. per picul. (A minimum charge of 50 c. will be made in all cases.) Forty-eight hours is allowed for the discharge of lighters, after which time demurrage will be charged at the rate of 150 dols. per day or part of a day, per lighter. The foregoing rates, both import and export (with the exception of sleepers and coal), do not include coolie hire for discharging and loading steamers or discharging lighters with import cargo. **Coolie Hire:**—Rates at Taku Bar, railway material (up to 3 tons weight), 30 c. per ton; over 3 tons weight, 35 c. per ton; extra heavy lifts, 50 c. per ton. Cement, 20 c. per ton. Hard wood, 40 c. per 1,000 sup. ft. Lumber, 35 c. per 1,000 sup. ft. Lumber (extra large), 50 c. per 1,000 sup. ft. Sleepers, 150 dols. per 10,000 pieces. Foochow poles, 150 dols. per steamer up to 1,300 tons reg. (sufficient to cross the bar). Foochow poles, 350 dols. per steamer up to 1,300 tons reg. (if discharged entirely at the bar.) Winch drivers supplied to steamer, 1 dol. 50 c. per day; 3 dols. per night. Use of steam winches on the lighter, 10 taels per day. **Towage:**—Towing steamers to or from the swinging berth, 25 taels; to or from the 1st ^{and} 2nd cutting, 50 taels. When the tug's rope is used, 10 taels extra is charged. **Water:**—40 c. per ton.

Pro Forma Charges on a steamer of 1,200 net reg. tons, with 2,300 tons of coal, of which 1,700 tons was brought to the Bund by the steamer:—

	Taels. mace.
Pilotage, 9 taels per foot	189 00
Stevedorage, 2,300 tons at 25 c. per ton, 575 dols. at 70	402 50
Lighterage and stevedorage at bar, 1,700 tons at 1 dol. 25 c. = 2,125 dols. at Ex. 70	1,487 50
Wharfage	35 00
Mooring fees, 4½ c. per net reg. ton: 54 dols. at 70	37 80
Customs fees, night permits	63 00
Sampan hire, etc.	15 00
Tonnage dues, 4 mace per reg. ton = 480 H.K. taels at 107	513 60

2,743 40 = £411 10s. 2d

China.

WENCHOW.

Wenchow, in lat. $27^{\circ}59'$ N., long. $120^{\circ}38'$ E., is on the Ou-kiang or Ou River.

Population.—80,000.

Imports.—Kerosene, opium, woollen, cotton, and silk piece goods, and foreign sundries.

Exports.—Tea, oranges, tobacco, soapstone, timber, etc.

Accommodation.—Vessels drawing 14 ft. can come up to and moor in the river opposite the town, 30 miles from the mouth. There is one wharf only, which belongs to the China Merchants' Steam Navigation Company. No one unless well acquainted with the port should attempt to berth a vessel within the port limits, as the depths are constantly changing. A British Consul visits here occasionally from Ningpo, and there is a Custom House under foreign superintendence. Fish, fowls, eggs, and pork at moderate prices. Native vegetables and fruit plentiful and cheap. Rise and fall of tide, 18 ft.

Pilotage.—There are no licensed pilots, but on application by telegram, etc., to the Harbour Master, experienced pilots are supplied.

Pro Forma Charges on a steamer of 1,216 reg. tons :—

	Dols.	c.
Pilotage in from White Rock	26	00
Pilotage, out	26	00
Customs charges, entrance fee	2	50
.. .. clearance fee	2	50
.. .. endorsement	1	25
Fresh water	3	00
	61	25 = £6 2s. 6d.

WU HU.

Wu Hu, lat. $31^{\circ}20'$ N., long. $118^{\circ}24'$ E., a Treaty Port on the Yangtse is a half-way port between Chinkiang and Kiukiang.

Population.—122,000.

Imports.—Opium, cotton and woollen goods, kerosene, etc.

Exports.—Rice, tea, raw silk, wheat, ground nuts, etc.

Accommodation.—The anchorage is good. Vessels drawing 18 ft. water can come here. Wu Hu has excellent water communication with the interior.

Pilotage.—From Shanghai, 150 taels (about £20).

Port Charges.—**Tonnage Dues** :—Vessels under 150 tons, 1 mace (about 3d.) ; over 150 tons, 4 mace per ton, payable every 4 months. **Consular Fees** :—12s. 6d. **Stevedore** :—Loading or discharging, 2d. per ton. **Provisions** :—Cheap ; beef, 4d. per lb.

CHINA

(BRITISH POSSESSIONS).

The British Crown Colony of Hong Kong embraces the island of that name and the adjoining peninsula of Kowloon, from which it is separated by a narrow strait—the Ly-ee-mun Pass—not more than a quarter of a mile wide. The combined territories have an area of 405 square miles, with a population of 414,368.

Commerce.—Hong Kong is a free port, so that there being no Custom House and consequently no official returns of value concerning imports and exports, these have necessarily to be based upon local mercantile estimates. According to the estimates thus made, the foreign trade of the colony is of an annual value of six million pounds sterling, of which imports account for four millions, and the exports the other two millions. Perhaps, however, the following table will give a much better idea of the great value of the trade of this colony than any mere mention of millions of pounds sterling can possibly convey. During the year 1907, 16,515 vessels of European and American construction, of 20,311,400 tons net reg., reported having carried about 10,842,000 tons of cargo, as follows :—

	Tons.
Import cargo	4,366,000
Export cargo	2,355,000
Transit cargo	3,396,000
Bunker coal shipped	725,000
	<hr/> 10,842,000

The total reported import and transit trade of the port for 1907 amounted to 23,819 vessels of 11,512,223 tons, carrying about 8,237,000 tons of cargo, of which about 4,841,000 tons were discharged at Hong Kong.

Similarly, the export trade of the port was represented by 23,841 vessels of 11,520,668 tons, carrying about 3,049,000 tons of cargo, and shipping about 729,000 tons of bunker coal.

One hundred and five thousand nine hundred and sixty-seven emigrants left Hong Kong for various places during the year. Of these 78,576 were carried in British ships and 27,391 in foreign ships.

One hundred and forty-five thousand eight hundred and twenty-two immigrants were reported as having been brought to Hong Kong from the several places to which they had emigrated, either from this Colony or from coast ports. This included 905 returning from South Africa. Of the total number, 112,742 arrived in British ships and 33,080 in foreign ships.

The trade of the Colony is of a very general nature, including cotton and cotton goods, opium, rice, coal, flour, oil, sugar, earthenware, timber (including sandal-wood), ivory, live stock, hemp, etc., whilst the tea and silk trade of China is largely in the hands of Hong Kong firms.

Mercantile Marine.—The registered shipping at December, 1906, had a total tonnage of 49,181 tons, made up of 73 steamers of 37,142 tons, and 39 sailing vessels of 12,039 tons. In addition to these there are a number of junks (ocean-going and coastwise) and steam launches which are licensed by the local authorities.

China (*British Possessions*).

Currency, Weights and Measures.—The money in use in Hong Kong is of a mixed character, as will be seen from the following particulars. The coins in free circulation are :—

	<i>s.</i>	<i>d.</i>
The Colonial dollar of 100 cents =	2	0
The Mexican dollar of 100 cents =	2	0
The Chinese tael = 10 mace	}	= about 3 4
100 candareens = 1,000 cash		

In addition, there are 1, 5, 10, 20, and 50 cent pieces of the Hong Kong coinage.

The weights and measures in general use are the same as those of Great Britain, but in addition the following Chinese weights and measures are often employed.

1 tael	=	1 $\frac{1}{2}$ oz. avoirdupois.
1 catty	=	1 $\frac{1}{2}$ lb. avoirdupois.
1 picul	=	133 $\frac{1}{2}$ lb. avoirdupois.
1 chek	=	14 $\frac{3}{4}$ in.
1 cheung	=	12 $\frac{3}{16}$ ft.

HONG KONG.

The Island of Hong Kong is situated off the coast of the province of Kwang-tung, near the mouth of the Canton River, in lat. 22° 19' N., long 14° 9' E. It is 40 miles from the Portuguese colony of Macao, and 90 miles from Canton. Distance by sea from Liverpool, via the Cape, 12,840 miles ; via Suez Canal, 9,705 miles.

Population.—414,368.

Imports.—Alum, sulphur, nut oil, cottons, woollens, gunnies, iron, lead, copper, coal, beans, peas, bean-cake, sugar, wines, spirits, beer and ale, hardware, glass, dye barks, provisions, grain, petroleum, sandal-wood, &c.

Exports.—Opium, rice, saltpetre, granite, tea, oils, camphor, sugar, assia, matting, fire crackers, bristles, matches, soy, porcelain, earthenware, paper, soap, &c.

Accommodation.—The colony is divided from the mainland of China by a narrow strait of water, which at its extreme eastern end is not more than a third of a mile wide, and is known as the Ly-ee-mun Pass, and is strongly fortified. Thence proceeding westwards, passing Quarry Bay, the seat of the Taikoo Sugar Refining Co., and rounding North Point, the waters of the harbour proper are reached, and are here some 2 to 3 miles wide, and the surface area some 10 square miles in extent.

The limits of the harbour terminate at the western end of the city of Victoria, and steamers bound from or to the south pass through the Sulphur Channel (about 400 yards in width) between Hong Kong and Green Island.

To the N.N.E. of Green Island, and between it and the mainland, lies the toncutter's Island, which is heavily fortified, and on which is the Government dépôt for explosives of all descriptions.

Opposite to Hong Kong is the Peninsula of Kowloon, ceded to Great Britain in 1860, and stretching away for miles to the rear of Kowloon lies the New Territory of some 200 square miles, leased to England for 99 years in 1898. The lease also includes the islands of Lantau, Lamma, Changechow, and others.

China (*British Possessions*)—Hong Kong (*continued*).

At Kowloon are the extensive premises of the Hong Kong and Kowloon Wharf and Go-down Co., Ltd., with wharf accommodation for six ocean steamers of any size, with deep water alongside at low water.

It is here that some of the merchant liners discharge their cargo, but most of the discharging is done in the harbour by means of lighters.

The anchorage is divided by two fairways, which are marked by lines and mooring buoys. The west end of the central fairway is marked by two automatic buoys with fixed red lights. Sailing vessels anchor north of the northern fairway, and can lie at single anchor; steamers between the north and middle fairway, unless fast to a buoy, must open hawse to the S.E. junks and cargo boats south of the middle fairway. No vessel is allowed to anchor in any fairway. The anchorage is in 5 to 9 fathoms on mud. The man of war anchorage is off the eastern end of the town.

The line of telegraph cables crossing between the north point of Hong Kong and the S.E. point of British Kowloon is marked by four white posts (two on each side) each carrying a red lamp at night, and by white obelisks on the hillside at the back of the posts. No ships or vessels of any description are allowed to anchor within the rectangle composed by these four white posts and lights.

Kerosene anchorage is E. of Kellet's Island. Gunpowder and quarantine ground are off the S.W. end of Stonecutter's Island.

There are four lights:—One on the *Island of Waglan* (lately taken over from the Chinese Customs) to the east of the colony, and which has taken the place of the Cape d'Aguilar light. It is group flashing, white, interval of half a minute between flashes; range of visibility, 22 miles. *Gap Rock Light* is white, revolving every 30 seconds; range of visibility, 18 miles. *Cape Collinson*, just at the entrance to Ly-ee-mun Pass, an occulting white and red light of the fourth order, visible 16 miles. *Green Island Light* occulting, white of the first order, visible 18 miles.

The following are the dimensions of the dry docks, etc.:—

Situation and Name of Dock.		Length over all, in feet.	Width of Entrance, in feet, at High Spring Level.	Depth on Sill, in feet, at High Springs.
Kaulung.	Admiralty No. 1 . . .	576	83	29
	" " No. 2 . . .	371	74	19½
	" " No. 3 . . .	264	49	13½
	" Cosmopolitan . . .	466	78½	21
	" Patent Slip No. 1 . .	240 (cradle)	39 (cradle)	Forward 12 } on Aft 14 } blocks
Aberdeen.	" " " No. 2 . . .	220 (cradle)	37 (cradle)	Forward 10 } on Aft 12 } blocks
	" Hope	433	81	23
	" Lamont	340	64	16

Vessels of 1,000 tons are built and all repairs can be done. In the Admiralty Dockyard there is a 2½-ton steam crane and a 7-ton and a 20-ton sheers. The private yards have sheers to lift 100, 75, 25, 20, and 15 tons cranes to lift 12, 5, 4, and 2 tons, and a travelling crane to lift 25 tons.

Climate.—The rainy season extends from May to October. The annual rainfall averages about 95 in.; and the range of the thermometer 34° to 94° F.

During the hot season, say from June to September inclusive, the color

China (British Possessions)—Hong Kong (continued).

is not infrequently visited by typhoons, some of which are liable to be severe. In any case, the small craft make for sheltered anchorages, and should the weather appear threatening all prudent masters leave their buoys, etc., and anchor in some of the numerous bays close at hand. Amongst those most preferred are Kowloon Bay and Junk Bay, whilst many make for an anchorage behind Stonecutter's Island.

Kowloon is one mile from Victoria, and a constant steam ferry service is maintained throughout the day.

Victoria is the capital of the island. Excellent fresh water is supplied to shipping in tanks and by steam water boats, and may also be obtained at the wharves at Kowloon. Provisions of all sorts are plentiful and fairly cheap.

Time Signals.—Chronometers can be checked. A red ball is hoisted half-way up a mast, above a masonry tower near the police station at Kauling Point, north side of harbour, at 0 h. 55 m. 0 s. p.m. The ball is hoisted close up at 0 h. 57 m. 0 s. p.m., and dropped at 1 h. 0 m. 0 s. p.m. Hong Kong standard time, equal to 17 h. 0 m. 0 s. Greenwich mean time, and 0 h. 36 m. 41 s. local mean time.

Pilotage.—Not compulsory. Steamers, in or out of harbour, 10 dols.; from or to outside waters of colony, 15 dols.; sailing ships (not under towage), in or out of harbour, 15 dols.; from or to outside waters of colony, 20 dols.; moving steamer in harbour, 5 dols.; moving sailing ship in harbour, 10 dols.

Port Charges.—**Light Dues** :—2 c. per net reg. ton. **Towage** :—to and from dock, 100 dols. Towage to moorings from outside harbour limits, according to arrangement. **Ballast** :—Sand, 50 c. to 1 dol. per ton; stone, about 2 dols. per ton. **Coolie Hire** :—40 to 50 c. per man per day.

Landing Rates (the Hong Kong & Kowloon Wharf & Go-down Co., Ltd.):—

	Wharf.	Stream.
Lead in pigs, per ton of 20 cwt.	50 c.	70 c.
Old iron, cuttings, horseshoes, pig-iron, per ton of 20 cwt.	75 c.	1 dol.
Wire, wire rope, chain (new and old), per ton of 20 cwt.	75 c.	1 dol.
New iron in bars and bundles, per ton of 20 cwt.	85 c.	1 dol. 20 c.
Steel plates, castings, angles, girders, machinery, rails, per ton of 20 cwt.	95 c.	1 dol. 25 c.
Flints, per ton of 20 cwt.	—	1 dol. 25 c.
Beet sugar, per ton of 20 cwt.	65 c.	90 c.
Other goods, per ton of 20 cwt.	65 c.	90 c.
Other goods, per ton of 40 cubic ft.	60 c.	80 c.

These charges include 7 days' free storage.

Discharging from vessel alongside wharf, using ship's gear :—

	Dols.	c.
1 ton and under	1	25 per ton.
2 tons	1	75 ..
5 ..	2	00 ..
7 ..	2	25 ..
8 ..	2	50 ..
9 ..	2	75 ..
10 ..	3	00 ..
11 and over by sheer legs	5	00 ..
Receiving from vessel in the stream	1 dol.	per ton extra.

using Company's sheer legs, including wharfage, 5 dols. per ton or part of a ton; minimum charge, 50 dols. When discharging heavy weights the slinging done by the ship. When loading the slinging is done by the wharf company at a charge of 1 dol. per ton (minimum 5 dols.). Night work, 5 dols.

China (British Possessions)—Hong Kong (continued).

per gang from 7 p.m. to midnight; 15 dols. per gang from 1 a.m. to 6 a.m. Wharfage, 60 dols. in full. Cargo delivered from ship's side at half rates.

Ligherage:—About 19 c. per ton. **Boat Hire**:—50 c. to 1 dol. per day.

Discharging or Loading:—General cargo, 12 c. per ton; rice, 10 c. per ton. Discharging, Japanese coal, 25 c. per ton; Welsh, 60 c. per ton; kerosene, 32 dols. per 10,000 cases. **Noting Protest**:—3 dols. 25 c. **Hatch Survey**:—15 dols. **Water**:—30 to 50 c. per ton.

Health Office.—Health Officer's fees, 5 dols. per day, 30 dols. per month. British bill of health, 6 dols.; to visé (same as French Consulate), 4 dols. 85 c.; American Consulate, 5 dols. 75 c.; Dutch, 85 c.; Russian, 10 dols.; Japanese, 2 dols. 1 c.

Brokerage.—Commission on disbursements, $2\frac{1}{2}$ per cent. on freight, according to agreement, but generally 5 per cent.; brokerage, 5 per cent.; brokerage on charters, 1 per cent.

Tariff of rates charged at the Kowloon, Cosmopolitan, and Aberdeen Docks, on the gross tonnage, builders' measurement:—

For vessels of	100 to	300 tons		Dols.
	100 to	300 tons		200
"	301 "	500 "		250
"	501 "	600 "		300
"	601 "	700 "		350
"	701 "	800 "		400
"	801 "	900 "		450
"	901 "	1,000 "		475
"	1,001 "	1,100 "		495
"	1,101 "	and upwards,	45 c. per ton.	

For the above amounts the vessel is allowed to remain in dock three days from the time the caisson shall have been in its place; and for every day after the third the following charge is made:—

For vessels of	100 to	400 tons		Dols.
	100 to	400 tons		50
"	401 "	600 "		60
"	601 "	800 "		70
"	801 "	900 "		80
"	901 "	1,000 "		90
"	1,001 "	1,100 "		100
"	1,101 "	1,200 "		110
"	1,201 "	and upwards,	9 c. per ton.	

FOR RE-COPPERING AT ALL THE DOCKS AND PATENT SLIPS.

Per sheet 75 cents.

The above includes all charges for docking, undocking, shoring up, stripping, scraping, caulking bottom, and finding the following materials for the said work, say—pitch, tar, oakum, felt, also towing to dock.

WEI-HAI-WEI.

Wei-Hai-Wei, in the Chinese province of Shantung, was leased to Great Britain in 1898. The territory thus leased comprises the port and bay, the Island of Liu Kung, all the islands in the bay, and a belt of land 10 mile wide along the entire coast line of the bay. It has an area of 285 square miles, and a population of about 150,000. The port is duty free, the trade being carried on by steamers and junks. The chief imports are cotton goods, provisions, coal, oil (kerosene), flour, sugar, timber, and provisions, the principal exports being ground nuts and salt fish.

The port is in lat. $37^{\circ}31'$ N., long. $122^{\circ}4'$ E.

Accommodation.—There are two entrances to this port, the

China (British Possessions)—Wei-Hai-Wei (*continued*).

eastern entrance, navigable by vessels drawing 18 ft. of water; and the western entrance, which is always used by vessels drawing over 18 ft. There is a sufficient depth of water for the largest vessels, but the anchorage is limited. There is an iron pier 765 ft. long, with a depth of 23 ft. of water at the end.

Pilotage.—Nil.

Port Charges.—**Entrance and Clearance:**—According to agreement, usually £10 10s. for ocean steamers. **Labour:**—30 c. per coolie per day. Double for night work. **Provisions:**—Meat, bread, vegetables, and fruit can be obtained, but no water fit for drinking.

CHINA (GERMAN POSSESSIONS).

TSINGTAU.

Tsingtau is in lat. $36^{\circ}44'$ N., long. $119^{\circ}32'$ E., on Kiau-chau Harbour. Kiau-chau is the German naval station. Tsingtau being the seat of Government.

Population.—Of the territory, about 33,000.

Accommodation.—There is a floating dock at Tsingtau 410 ft long, 98 ft. wide at entrance at high water ordinary spring level, with depth of 36 ft. on sill, and with a lifting power of 16,000 tons. Repair of all kinds can be effected. There is a weekly mail steamer communication with Shanghai.

Time Signals.—A black ball, 7 ft. in diameter, is hoisted half mast on the Observatory flagstaff 5 minutes before noon, and close up 2 minutes before. The ball is dropped 10 ft. at noon standard time of the 120th meridian E. longitude, equal to 16 h. Greenwich mean time, and 1 m. 15.8 s. local mean time. A gun is fired simultaneously with the dropping of the ball. Chronometers can be compared at the observatory.

CHINA (JAPANESE POSSESSIONS.)

By the Treaty of Peace signed on September 5, 1905, at Portsmouth, New Hampshire, the lease of the fortified naval station at Port Arthur, together with the commercial harbour, Talien, and adjacent territory and waters were ceded to Japan by the Russian Government. At the same time, the railway between Chan-Chun and Port Arthur and the coal mines, worked in connection therewith, were also handed to Japan.

TAIREN.

Tairen, late Dalny, is in lat. $38^{\circ}55'$ N., long. $121^{\circ}30'$ W., and is situated in Talienwan Bay.

Population.—21,074.

Imports.—Machinery, cotton goods, iron goods, building materials, flour, rice, etc.

Exports.—Beans, bean cake, and wild silk.

Accommodation.—Vessels drawing up to 20 ft. can be berthed quite close into or outside the breakwater. Within a mile to the northward, there is a depth of $4\frac{1}{2}$ to $4\frac{3}{4}$ fathoms at low water ordinary spring tide available for anchorage; soft mud bottom. At the S.E. corner of the harbour, inside the breakwater, two lines of parallel quays have been built, each extending about 1,925 ft. in length, with a base of about 1,000 ft. wide, where vessels drawing 20 to 30 ft. at low water ordinary spring tide can be moored. The quays are furnished with a number of go-downs, and with railway connection. The dry dock is 380 ft. long over all, 43 ft. wide at the entrance at high spring level, and 18 ft. on the sill at high springs. There are engineering works for small repairs, and large electric lighting plant. There are also two floating cranes to lift 50 tons each. This harbour is being greatly improved by repairs and dredging, and an eastern breakwater, 1,221 ft. in length, is planned, which is expected to be completed in 1910.

Port Regulations.—Vessels entering by the south channel with the intention of mooring at the wharf must, when off the lighthouse on the south San Shan Tao, hoist their national flag and the ship's number, and must also signal their draught. Those entering by the north channel must signal in the same manner when at a distance of about 3 miles off the wharf. When entering the port, vessels are to repeat at intervals a short and long blast by steam whistle or fog horn. Vessels will be ordered to and from the wharf by the Signal Station at the northern extremity of the wharf. The quay line is divided into twelve sections, numbered consecutively from A to L in alphabetical order. The middle point of the mooring line allotted for an incoming vessel will be indicated by the flag N in the daytime and by a red light at night. Vessels intending to discharge cargo on, or load at the wharf must send an application to the South Manchuria Railway Co.,

China (Japanese Possessions)—Tairen (*continued*).

the owners of the wharves, in the name of captains or agents, accompanied with the manifest and the cargo plan. Vessels laden with explosives or inflammables must hoist a red flag in the daytime and a red light at night at the foremast head, and lie at anchor outside the line of the breakwater until they receive instructions from the company. Vessels are not to anchor within 600 ft. of the breakwater or the wharf without the consent of the Captain-Superintendent. If an epidemic breaks out on board any vessels while moored at the wharf, all communications with the outside shall be forthwith suspended, and directions from the Captain-Superintendent shall be asked for. If fire breaks out in vessels moored at the wharf, or in case of their being threatened with imminent danger, an immediate report shall be given by steam-whistle, alarm-bell, or some other means. Waste matter shall not be thrown overboard. The company will keep ash-boats ready to undertake its removal free of charge, when signalled for by the flag G. In case waste matter is thrown overboard either wilfully or through fault, double the expense for removing will be charged. When intending to cast anchor for the purpose of mooring at the wharf, vessels must do so in such manner as will not be an impediment to others. Vessels while moored must keep a sufficient number of the crew on board to attend the cargo work and to ensure their safety. If any loss or damage is caused by the absence or insufficiency of men aboard, or by any other negligence on the part of the crew, the owners of the vessels will be held responsible for it. If any loss or damage is caused to the breakwater, quay wall, tow boats, fenders, staging-planks, or other property of the company, either wilfully or through fault on the part of captain or crew, the owners of the vessels will be held responsible for it.

The working hours for loading and discharging cargo are from sunrise till sundown. If work is to be done outside the hours, the captain or agents must apply to the Captain-Superintendent for permission. Vessels must report prior to leaving the wharf the date and hour of their intended departure and hoist the Blue Peter. When preparations are completed, the ship's number must be hoisted in the daytime; and at night, a long and short blast sounded as signal.

Pilotage.—Not compulsory. 25 yen each way, per vessel, including mooring and unmooring at the wharf. For night services double rates are charged.

Port Charges.—Boat Hire:—Tow-boat for mooring and unmooring, 20 yen each time; mooring boat, 5 yen each time, after sundown till midnight, 50 per cent. extra, and after midnight until daybreak, 100 per cent. extra is charged. **Steam Launches:**—For less than an hour, 10 yen; for every hour or fraction thereof over an hour, 5 yen; after sundown till midnight, 50 per cent. extra; and after midnight till daybreak, 100 per cent. extra is charged. **Sampan Hire:**—50 to 100 sen per day. **Labour:**—Chinese, 70 sen per man per day; Japanese, 1 yen 60 sen per man per day. **Stevedorage:**—Compulsory, if vessels discharge alongside the Manchurian Railway Company's wharf. Loading or discharging, 15 sen per ton. The company reserves the option of supplying necessary hands at the following rates in lieu of the above: Japanese stevedore, 1 yen 60 sen per day or fraction thereof; Chinese foreman, 1 yen per day or fraction thereof; Chinese coolie, 70 sen per day or fraction thereof; Japanese winchman, 3 yen per day or fraction thereof; Chinese winchman, 1 yen 40 sen per day or

China (Japanese Possessions)—Tairen (*continued*).

action thereof. Night work, from sundown till midnight or part thereof, 100 per cent. extra; from sundown till sunrise or part thereof, 100 per cent. extra.

Berthage Dues.—These dues, which are expected to take effect from April 1 (1909), are as follows:—

Vessels.	Berthage Rates.		Shifting Rates.	
	Yen.		Yen.	
Under 200 tons	.	2	.	—
" 500 "	.	10	.	3
" 1,500 "	.	25	.	15
" 3,000 "	.	40	.	25
" 5,000 "	.	55	.	40
Above 5,000 "	.	65	.	45

At night-time 20 per cent. extra will be charged, and for the use of a tugboat, 50 per cent. extra. (The extra charge for the use of a tugboat applies only when a vessel shifts from one berth to another.)

Pro Forma Charges on a steamer with a cargo of 2,000 tons flour in, and ballast out, drawing 18 ft. loaded:—

	Yen	sen.
Brokerage	100	00
Pilotage in and out	50	00
Towage, two tow-boats at 20 yen each	40	00
Boat hire, 5 yen each way	10	00
Consular fees	6	25
Stevedorage, 2,000 tons at 15 sen per ton	300	00
	506	25 = £51 13s. 7d.

CHINA (PORTUGUESE POSSESSIONS).

MACAO.

Macao, in lat. $22^{\circ}10'$ N., long. $113^{\circ}35'$ E., is a Portuguese settlement in China, standing on a small peninsula projecting from the south-east end of Hsiang Shan Island.

Population.—About 80,000.

Imports.—Salt, woollen and cotton goods, raw opium, etc.

Exports.—Prepared opium and tobacco, fire-crackers, and fresh and salted fish.

Accommodation.—The entrance is narrow. Depth on bar at high water ordinary springs, 12 ft. ; ordinary neaps, 10 ft. Depth in port at ordinary springs, high water, 18 ft. ; low water, 12 ft. There are three wharves, two of which are private ; they are respectively 80, 70, and 50 ft. and have a depth alongside at low water ordinary springs of 7 ft. Vessels can also load and discharge by cargo boats. There is an anchorage 6 miles from the lighthouse in $3\frac{1}{2}$ to 4 fathoms at low water ordinary springs. Macao possesses a healthy climate.

Pilotage.—Free.

Port Rules :—(1) Any vessel nearing the road and wanting a pilot must have its national flag at the foremast-head. (2) Ships must be reported with in 24 hours after arrival. (3) Shipmasters on landing must leave their ship's papers at the office of the captain of the port, where they will remain until departure. (4) Ballast or rubbish must not be thrown overboard in port. Macao is a duty-free port. Vessels have to pay only their clearance dispatch, which never exceeds 6 dols. Signals referring to typhoon warnings are made both in the Harbour Master's office and the signal post on the Guia Fort.

THE EAST INDIAN ARCHIPELAGO (BRITISH POSSESSIONS.)

The British possessions in the East Indian Archipelago consist of the Crown Colony of Labuan, the protectorates of British North Borneo and Sarawak, and the sultanate of Brunei.

LABUAN ISLAND.

This island lies about 6 miles from the N.W. coast of Borneo. It has an area of about 31 sq. miles, with an estimated population of 8,411. Since January 1, 1907, the colony has been administered by the Governor of the Straits Settlements. The island serves as a useful depôt for the productions of Borneo, and for British wares distributed in exchange. The island is in direct communication with Singapore by submarine cable.

VICTORIA HARBOUR.

Victoria Harbour, the port of Labuan, is on the S.E. side of the island, lat. $5^{\circ}20' N.$, long. $115^{\circ}18' E.$

Population.—1,500.

Imports.—Rice, salt, kerosene, provisions, etc.

Exports.—Canes, hides, gutta-percha, sago flour, etc.

Accommodation.—The harbour is well sheltered in both monsoons. The largest steamers can anchor here in 6 to 7 fathoms on a stiff mud bottom. There are four coaling wharves, with depths of water ranging from 17 to $27\frac{1}{2}$ ft. at low water spring tide. About 500 tons of coal is usually put on board in 24 hours. There is a fortnightly service between Singapore and Borneo. Telegraph communication with all the world.

Pilotage.—Not compulsory. Pilot can be obtained at Pappan Island.

Port Charges.—**Harbour Dues** :—2 c. per reg. ton. **Customs** :—This is a free port with the exception of spirits, tobacco, and opium. **Water** :—can be obtained at 1 dol. per ton. **Provisions** :—Obtainable.

BORNEO (NORTH).

The territory now administered by the British North Borneo Company, under a charter granted by the Imperial Government, occupies the whole of the northern part of the island of Borneo. It has an area of 31,106 sq. miles, with a population of 160,000, and a coast line of over 900 miles. The trade of the territory is of an annual value of about one million pounds sterling, the latest returns available showing imports valued at £350,000, and exports £575,000. This trade, consisting principally of the importation of textiles, foodstuffs, mining machinery, and general merchandise,

East Indian Archipelago.

and the exportation of timber, sago, tobacco, coffee, fruits, and vegetables, is chiefly carried on through Singapore and Hong Kong, via Labuan, with Great Britain and her colonies. A branch line from the mainland to Labuan connects the territory by submarine cable with Singapore, the northern portion of the island being also provided with a telephone and telegraph service. A railway connects Brunei Bay with the interior, and also with Jesselton on Gaya Bay. Accounts are kept in dollar currency—100 c. = 1 dol. = 2s. 4d., the Government having its own copper and nickel coinage. Notes of the value of 1, 5, 10, 25, and 50 dollars freely circulate. Banking facilities are provided by the North Borneo Co., the Chartered Bank of India, and the National Bank of China. The weights in general use are as follows :—

100 catties	= 1 picul	= 133½ lb. avoirdupois.
40 piculs	= 1 coyan	= 2½ tons nearly.
16 $\frac{80}{100}$ piculs	= 1 ton.	

KUDAT.

Kudat is in lat. 6°52' N., long. 116°47' E., and is one of the principal trading ports of North Borneo.

Population.—1,000.

Imports.—Cloth, machinery, and provisions.

Exports.—Tobacco, cutch, india-rubber, fish, rice, etc.

Accommodation.—The harbour has an area of several square miles, with a depth of 6 to 7 fathoms. Depth at wharf, at low water spring tides, 18 ft. The British N. Borneo Government wharf is about 80 ft. long, with a T-head. There are no cranes on the wharf. There is telegraph communication with Singapore. Very little coal or water is obtainable.

Pilotage.—Nil.

Port Charges.—**Harbour Dues** :—3 c. per registered ton on entry which includes all charges for use of the port. **Labour** :—Chinese, about 50 c. per day of 10 hours. **Wharf Dues** :—On freight, other than passengers' luggage, from 1 c. to 10 c. per package. Half rates if discharged into lighters alongside.

MOARRA.

Moarra is in North Borneo at the point of Brunei Bay, and is open to vessel drawing 18 to 19 ft. The bar is of soft mud, so that a ship drawing a little more than 19 ft. would not injure herself in crossing. The Harbour is quite landlocked. The extensive coalfields which exist in the Pisang Rang are again being worked. Vessels can be loaded by lighters at 7 dols. 50 c. per ton.

SANDAKAN.

Sandakan, in lat. 5°50' N., long. 118°3' E., is the capital of British North Borneo, and the headquarters of the Government.

Population.—Between 8,000 and 9,000.

Imports.—Cloth, provisions, rice, flour, machinery, opium, tobacco, oil, iron, brass, earthenware, sugar, spirits, furniture, and specie.

Exports.—Tobacco, sago, pepper, coffee, timber, gutta-percha.

East Indian Archipelago—Sandakan (*continued*).

India-rubber, rattans, beeswax, camphor, edible birds' nests, mother-of-pearl shells, pearls, béche-de-mer, and tortoise-shell.

Accommodation.—The harbour at its entrance, between Balhalla and Trusan Duyong, is $1\frac{1}{4}$ miles wide, whence it gradually increases to its greatest width—viz., 5 miles. Its length is 15 miles, and it lies in a N.E. and S.W. direction. The only part properly examined by the Admiralty is that north of Pulo Bai and the Bay of Sapa Guya, situated on the east shore. The only danger in approaching the town is the Atjeh Rock, lying to the east of the end of the Sandakan Pier; it has $2\frac{1}{4}$ fathoms over it at low water, and is marked by a red and white chequered buoy with a cage top.

From the entrance to the end of the bay the depth of water varies from 6 to 3 fathoms. Some thirteen rivers run into the bay, and a bar has formed 6 miles from the entrance, with a depth of 4 fathoms at low water spring tides. Spring tides rise 6 ft. 9 in.; neaps vary from 1 to 4 ft.

On the same shore as the town of Sandakan, and about 10 miles below it, is an inlet known as North Harbour, 3,000 yards across at the entrance, and extending inland about 3 miles, with an average depth of 7 to 10 fathoms.

The Sapa Guya Bay, on the shore opposite to Sandakan, affords splendid anchorage for large vessels; lowest water $3\frac{1}{2}$ fathoms. There are other good anchorages in the harbour, well sheltered. A pier has been erected, at which vessels drawing 20 ft. can lie.

The Cowie Harbour Coal Co. have a private wharf, at which supplies of bunker coal can be obtained; the usual stock can be taken at 500 tons as a minimum. The China-Borneo Co. have a patent slipway capable of taking vessels up to 145 ft. long, and 600 tons gross weight. The engineering works in connection are well fitted up; all likely work for vessels of the slipway capacity can be done, and ocean vessels often avail themselves of the works for machinery repairs, etc. There are two saw mills at the port, an ice plant, and a cutch factory. Sandakan lies almost in the fairway of vessels plying between China and Australia, and is in regular communication with Singapore once a fortnight. Two steamers afford direct communication with Hong Kong, and there is frequent communication with the Philippine Islands, the Celebes, etc. Water can be supplied alongside ships by a water boat. Supplies of poultry, beef, fish, vegetables, and liquors are obtainable in the town. The Admiralty Chart No. 950 gives a detailed plan of the harbour.

Port Charges.—**Harbour Dues**:—3 c. per reg. ton. **Labour**:—for stevedoring, about 1 dol. per day. **Fresh Water**:—Can be obtained from hydrants on the Government wharf, price 65 c. per ton. There are no light dues or pilotage fees. The tonnage dues, water rates, etc., are in Straits (Singapore) currency.

SARAWAK.

The Rajaship of Sarawak (a British protectorate) occupies a large territory of about 52,000 square miles, with a coast line of 400 miles, on the western side of the island of Borneo; it has a population officially estimated at 500,000. The total trade of this protectorate is of an annual value of a little over one and a half million pounds sterling; imports

East Indian Archipelago.

£685,130 ; exports, £879,795. The trade is chiefly with Singapore. Roads are being constructed with the object of improving the communication between the inland districts and the coast and river ports ; the two principal rivers (the Sarawak and the Rejang) are navigable by large steamers for 23 and 60 miles respectively.

Accounts are kept in dollars of 100 c. ; 1 dollar = 2s. 4d. The weights and measures employed in all commercial transactions have, in accordance with a decree of July 15, 1886, been assimilated to those of the British Imperial system.

KIDURONG.

Kidurong is in lat. $3^{\circ}15'$ N., long. $113^{\circ}5'$ E.

Accommodation.—Kidurong Bay is the best sheltered harbour during the N.E. monsoon, between Rejang River and the Brunei River. Vessels lie sheltered from the E.N.E. and N.W. gales. Anchorage is in 3 to 8 fathoms on soft mud and sand. Good fresh water can be obtained. At Kidurong Point there is a fixed white light, which can be seen 7 miles. There is no port. The bay is only used as a shelter from N.E. gales.

KUCHING.

Kuching, the capital of Sarawak, is situated on the Sarawak River, lat. $1^{\circ}35'$ N., long. $110^{\circ}19'$ E., about 25 miles from its mouth.

Imports.—Cloth, brasswork, opium, salt, tobacco, crockery ware, rice, provisions, wines, beer, spirits, tea, ironware, etc.

Exports.—Timber, gold, edible birds' nests, bees-wax, pepper, ataps for roofing ; canes, camphor, rice, fish, gutta-percha, sago flour, raw and pearl sago, antimony, paint, india rubber, etc.

Accommodation.—Vessels of 1,000 tons can ascend as far as the town, and anchor alongside the wharf. The lowest depth of water in the navigable channel is $2\frac{1}{2}$ fathoms ; springs rise 18 ft., and neaps 10 ft. At the entrance of the river a conical buoy, painted red, has been placed off the spit of Si Jalores, or the western shoal of the Moratabas entrance of the Sarawak River ; it is $3\frac{1}{2}$ fathoms at low water spring tides. There is a second entrance, Santubong, but it is shallow and not used by large vessels ; there is no buoy here.

Ships entering should not go to the westward of the buoy, but pass about a quarter of a mile to the eastward, and then steer for a small clump of trees, bearing about S.S.W. till the river is well open ; then steer mid channel. The few obstructions in the river are duly marked by notice boards, conspicuously placed, and easily read. At Tanjong Po there is a fixed white light, 450 ft. above the sea, which can be seen 24 miles.

Vessels can be beached at Tanah Puteh (Horse Shoe Point) or Santubong and small repairs are executed by Chinese and native shipbuilders. Opium importation is strictly prohibited except by licensed persons. Firearm and gunpowder, except for the ship's use, are liable to seizure.

Pilotage.—1 dol. per foot, or by agreement with the Government. There are no regular pilots, but these can always be obtained by applying at the shipping office at Kuching.

Port Charges.—**Buoy and Light Dues:**—3 c. per register ton

East Indian Archipelago—Kuching (*continued*).

Chinese Labourers :—50 c. per day ; carpenters, 1 dol. **Commissions** :—On ship's disbursements, freight, or procuring freight ; on all sales or purchases, 5 per cent. ; on collecting freight, $2\frac{1}{2}$ per cent. ; on sale of bullion, 1 per cent. **Steam-tug** :—According to agreement with the Borneo Company, Ltd. **Discharging Ballast** :—30 dols. per 100 tons. **Water** :—Fresh water can be had for the taking, or bought at 50 c. per ton. **Provisions** :—Beef, 35 c. per catty. Pork, 40 c. per catty. Fowls, 45 c. per catty. Vegetables and fruit are scarce and dear. Firewood, 4 dols. per 100 pieces.

Shipmasters must report their arrival and cargo at the Government office, Kuching. No person is allowed to land, or goods to be discharged, before the officers of the port are on board, except those in charge of the mail.

Ballast must not be discharged into any part of the river. No goods are allowed to be landed after sunset. No dogs are allowed to be imported without special leave from the Government.

REJANG RIVER.

At Rejang River there is $3\frac{1}{2}$ to 4 fathoms over the bar at low water, and at high water about 6 fathoms.

Ships of 1,000 tons and upwards can proceed some few miles up the river, and find good anchorage either at the village of Rejang, situated at no great distance from its mouth, or at Mount Susu, about 12 miles distant from the village of Rejang.

Steamers drawing 7 to 9 ft. of water could proceed without much difficulty about 160 miles up the river, which, with the exception of the narrow reaches near Sariki, has an average width of about 1,200 yards.

SADONG.

Sadong is a port for the shipment of coal.

Accommodation.—There is a bar at the mouth of the river, of soft mud, but vessels of 1,000 tons can enter. At full and new moon there is a dangerous bore in the river for 3 days.

BRUNEI.

The Sultanate of Brunei, a native state under British protection, lies on the N.W. coast of Borneo. It has an area of about 3,000 square miles, with a population estimated at 25,000. The oversea trade, although at present (1909) small, shows signs of considerable development, and cargo steamers are occasionally chartered for Brunei, the capital city and only port of the Sultanate. The principal imports are cotton goods, rice, tobacco, and sugar ; the exports consisting of coal, cutch, and other tropical products.

BRUNEI PORT.

Brunei Port is in lat. $4^{\circ}54'$ N., long. $114^{\circ}59'$ E.

Population.—About 10,000.

Imports.—Cotton cloths, gold thread, brass ware, iron, opium,

East Indian Archipelago—Brunei Port (*continued*).

tobacco, rice, salt, earthenware, gunpowder, etc. (Almost entirely from Singapore.)

Exports.—Coal, sago flour, india-rubber, gutta-percha, beeswax, birds' nests, hides, sharks' fins, and cutch.

Accommodation.—Vessels of 14 ft. draught can, at high water spring tides, safely ascend to the town, but care is required in navigation as there are numerous shoals between Sapo Point and Chermin Island. The beacons marking the channel are, however, in good order; above Chermin no difficulties are met with in the navigation. At ordinary high water vessels drawing more than 14 ft. cannot get over the Brunei bar. The most convenient anchorage for trade purposes is opposite the Sultan's palace, but vessels can proceed a mile further up the river, through the heart of the town, the river here being about $1\frac{1}{2}$ cables wide. Fresh water of good quality can be obtained. Fish, fowls, ducks, eggs, fruit, and vegetables are procurable at reasonable rates in small quantities. Coal is abundant and can be obtained at the mines, situated at the mouth of the Brunei River, Muara, and also from Labuan. Communications are frequent with Labuan, and with Singapore, via Labuan, twice a month by steamer.

Pilotage.—Good native pilots can always be had by applying to the harbour-master at Labuan.

Port Charges.—By treaty with Great Britain, a duty at the rate of 1 dol. per ton is leviable on British shipping, and is in lieu of other charges. Any steamship company could, through the British resident, make more favourable terms for a fixed number of trips, as the Government is anxious to encourage steamers to call.

His Britannic Majesty's Resident resides on the spot, or at Labuan. The native town consists of palm-leaf houses, raised on piles in the river. There are about 100 Chinese settled here, engaged for the most part in local trade, and their houses are erected on *terra firma*.

DUTCH POSSESSIONS.

The Dutch East Indies include all the Great Sunda Islands (with the exception of a part of Borneo), the Little Sunda Islands, the Moluccas (Spice Islands), and the western portion of New Guinea extending to 140° of E. longitude. The islands included in these groups are as follows:—

The Great Sunda Islands.—Sumatra, Banka, Java, Madura, Borneo (S.W., S., and E.), and the Celebes.

The Little Sunda Islands.—Bali, Lombok, Sumbawa, Suni (or Sandal-wood), Flores and Timor, with N. and S. Timor, Laut, etc.

The Moluccas, or Spice Islands.—Ceram, Gilolo, Amboina, Ternate, Buru, the Banda Islands, etc.

These islands, together with the western district of New Guinea mentioned above, have a combined area of about 736,400 square miles, with a population variously estimated at between thirty-five and forty millions. The trade of the islands is of an annual value of nearly forty-five millions of pounds sterling, the latest returns showing imports valued at over nineteen millions, and exports at over twenty-seven millions. Progress is being made in the direction of opening up the interior of the islands.

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the construction of railways by the State, and by private companies, while a telegraph and postal service has also been established. The only legal weights and measures throughout the whole of the Dutch East Indies are those of the Netherlands, but the old weights and measures are still to some extent customary and in concurrent use. The principal of these are the picul of 100 catties = 135·63 British Imperial pounds, and the tung of 8 ettos = 4 yards. The currency is the same as the Netherlands, gulden and cents, and all public accounts are kept, and taxes estimated and levied, in those denominations. 1 guilder of 100 c. = 1s. 8d., but this is subject to fluctuation in accordance with the rate of exchange current between the Colonies and the Motherland at any stated period, the average rate being 13 Colonial guilders = £1. The Bank of Java issues notes for 1,000, 500, 300, 200, 100, and 50 guilders, payable on presentation, in gold, and one for 25 guilders exchangeable only for silver. There are two other Dutch banks and branches of British banks which afford full banking facilities.

Harbour and Anchorage Dues.—The only Government charge on shipping is a harbour and anchorage due of 16 c. per cubic metre. This tax, which is payable every six months, covers the whole archipelago, so that vessels having paid at one Dutch port would not pay again within 6 months, although they might enter and clear from several other Dutch ports during that period.

Harbour Regulations (for all ports).—Ships intending to load or discharge must anchor within the limits of the Roads, and will be obliged to clear in at the office of the Master-Attendant. This is also applicable to those which put in in distress, for water, or provisions. The latter may anchor outside the Roads without conforming to the above obligation.

Every ship must hoist her ensign when entering or leaving the roads, when under sail or shifting berth, and when the Governor-General is present in the roads.

No ship may get under way without permission from the Harbour-Master.

Within 24 hours after arrival in the Roads, the master or agent must deliver at the Custom House a manifest of the cargo; also the ship's papers. These will be deposited with the Harbour-Master until the ship clears out. Should Government goods be on board, notice thereof must likewise be given to the civil authority.

No ballast may be thrown overboard in the Roads, or outside the Roads in less than 10 fathoms water.

No goods of any kind may be transhipped from one vessel in the Roads to another, without permission from the Custom House and the superintendence of a Custom House officer.

In the event of a fire on board of any ship, every vessel in the Roads must dispatch to its assistance at least one boat, properly manned and furnished with all available means for extinguishing the fire. Should a man-of-war be in the Roads, the boats must place themselves under the charge of the officer who is sent thence in command.

No goods may be landed or shipped off without a permit from the Custom House, where also all boats passing must lay-to.

All applications for prows (lighters) must be made in writing, directed, at Batavia, to the boat-office. Prows bringing cargo on shore must be

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provided with two or more boat-notes. To each prow carrying goods on board, a written receipt must be granted for the goods delivered. If the goods do not tally with the boat-note sent by the shippers, the same must be explained to the head man of the prow, in the presence of his crew, in which case he has the right to demand a re-counting of the goods. The prows may not be detained longer than is absolutely necessary.

Steamers can discharge or load at all times, the agent to whom the ship is consigned being held responsible should there be any breach of the Government regulations.

AMBOINA.

Amboina, in lat. $3^{\circ}40'$ S., long. $128^{\circ}14'$ E., is situated on the south side of Amboina Island.

Population.—Island, about 270,000; town, 9,000.

Exports.—Cloves, nutmegs, and mace.

Accommodation.—There is a good and safe anchorage in about 20 fathoms water, about two cable lengths from the shore, and a pier with 18 ft. of water at its extremity. There is an inner harbour, almost land-locked, but it is not considered healthy. Water, fruit, and vegetables can be obtained.

The clove harvest takes place in November and December.

ANJER.

Anjer, in lat. $6^{\circ}0'$ S., long. $106^{\circ}5'$ E., is a harbour in the Straits of Sunda. Distance from Liverpool by sea, 10,970 miles; via Suez Canal, 8,195 miles.

Accommodation.—The anchorage is in 12 to 19 fathoms of water, soft ground. It is dangerous during the N.W. monsoon, and landing is then difficult.

Fresh water, hogs, sheep, poultry, turtle, and vegetables can be procured.

BALIK PAPAN.

Balik Papan, in lat. $1^{\circ}15'$ S., long. $116^{\circ}50'$ E., is in south-east Borneo.

Imports.—Machinery, provisions, hardware, wood, rice, and general goods.

Exports.—Liquid fuel, kerosene, benzine, crude oil, small quantity of rattans, gutta jelotong, edible birds' nests, and timber.

Accommodation.—There is 24 ft. of water at low spring tides the tide rises 4 to $8\frac{1}{2}$ ft. Towage can be obtained. Ballast must be disposed of in water of more than 10 fathoms, or at the piers. Provisions are not expensive but they are not plentiful. Fresh water can be obtained.

Pilotage.—Compulsory. Pilots can be had from the pilot boat outside the harbour. Should there not be a pilot on board the pilot-boat when required by the master of a vessel, he is free to bring his ship into Balil Papan, and no pilotage will be charged. Should, however, a pilot offer his services, he must take one or pay full charges. The rate of pilotage is 5 fl (5 guilders) for ships of less than 500 cubic metres net register tonnage, and 10 fl. (10 guilders), for ships of 500 cubic metres net register tonnage and over.

East Indian Archipelago—Balik Papan (*continued*).

plus $1\frac{1}{2}$ guilders per 100 cubic metres, net register tonnage of the ship. Minimum rate 10 fl. (10 guilders).

Port Charges.—Tonnage Dues :—16 c. (guilder) per cubic metre, payable every 6 months. **Clearance** :—From harbour master, 1 fl. 50 c. **Unloading** :—60 c. per ton general goods ; 1 fl. 20 c. for iron.

A vessel loading or discharging between the hours of 6 p.m. and 6 a.m. is charged overtime as follows : 6 p.m. to 12 midnight, or a part thereof, 5 guilders ; 12 midnight to 6 a.m. or a part thereof, 5 guilders. On Sundays the same rate of overtime is charged as for working during the day.

Pro Forma Charges on a steamer of 6,030 gross tonnage, 3,928 net tonnage (11,342,937 cubic metres), entering and clearing the port of Balik Papan :—

	Gldrs.	c.
Harbour and anchorage, or tonnage dues	1,814	87
Pilotage in	180	00
Pilotage out	180	00
Port clearance	1	50
	<hr/>	<hr/>
	2,176	37 = £181 6s. 3d.

BANDJERMASIN.

Bandjermasin, or Banjarmasin, in lat. $3^{\circ}25'$ S., long. $114^{\circ}37'$ E., is on the N. coast of Borneo.

Imports.—Opium, piece goods, cutlery, gunpowder, firearms, rice, hardware, and provisions.

Exports.—Rattans, wax, birds' nests, and gutta-percha.

Accommodation.—The bar can only be passed by vessels of 13 ft. draught. The town is about 13 miles up the river. Once inside, there is 15 to 20 ft. of water up to the town, but a native pilot should be employed.

Port Charges.—Tonnage Dues :—16 c. (guilder) per cubic metre, payable every 6 months.

BANJOEWANGIE.

Banjoewangie, Java, is on Bali Strait, in lat. $8^{\circ}12'$ S., long. $114^{\circ}20'$ E.

Exports.—Sugar, coffee, tobacco, copra, and rice.

Accommodation.—There is good anchorage the whole year in about 12 fathoms. From May to November there is generally a fresh breeze from S.E. with slight swell, but never sufficient to stop work ; from December to April variable winds with calm sea. There is no bar. The entrance is marked by seven buoys. There is a crane to lift $1\frac{1}{2}$ tons.

Fresh provisions, and water for boilers and cooking purposes, are obtainable.

Pilotage.—There are no Government pilots, but if requested the Harbour Master will send a man well acquainted with the Strait to act as pilot.

Port Charges.—Harbour and Anchorage Dues :—16 c. per net cubic metre (payable once in 6 months).

BANTAM.

Bantam, in lat. $6^{\circ}7'$ S., long. $106^{\circ}10'$ E., is a port on the Island of Java.

East Indian Archipelago—Bantam (continued).

Accommodation.—The anchorage is in 3 fathoms, about a mile from the beach. This port is now seldom visited by European vessels.

BATAVIA.

Batavia is in lat. 6°15' S., long. 106°50' E. Distance by sea from Liverpool, via Suez Canal, 8,474 miles.

Population.—149,606.

Imports.—Opium, petroleum, coal, iron, piece-goods, and provisions.

Exports.—Sugar, rice, coffee, spices, hides, arrack, tea, etc.

Accommodation.—The usual anchorage for large vessels is in 5 to 6 fathoms, on a mud bottom, about a mile distant from the pier head. The roadstead may be considered as very safe, and although vessels roll considerably during the western monsoon, no danger of driving is apprehended owing to the excellence of the holding ground. When it is not safe to send ship's boats on shore, a blue flag is displayed at the guardship. There is a small dock at Onrust, an island about 6 miles from Batavia, and there is also a private floating dock at Amsterdam Island, 10 miles from Batavia, where vessels can be docked.

Time Signals.—See **Tandjong Priok.**

Pilotage.—Not compulsory. From 12 to 76 fl., according to the size of the vessel.

Port Charges.—See **Dutch Possessions.** Vessels calling for order of coal, or provisions are exempt from tonnage dues. **Labour:**—1 fl. per day for Caulkers, 2 fl. per day. **Provisions:**—Fresh meat, 60 c. per Amsterdam pound. Poultry and fruit are plentiful and moderate in price, but ships should be well found in salt provisions and stores, as they are very dear.

Pro Forma Charges on a ship of 947 tons register, chartered to load at Batavia, Probolingó, and Pasuruan:—

	Fl.	c.
<i>Batavia</i> —		
Coolie hire and boat hire	386	85
Certificate of survey, 35 fl.; hospital fees, 9 fl.	44	00
Harbour dues	239	45
<i>Probolingó</i> —		
Coolie hire, 100 fl. 20 c.; eight sugar hooks, 12 fl.	112	20
Clearance fees	15	00
<i>Pasuruan</i> —		
Port clearance and stamps	17	40
Boatman, 30 days	87	00
	901	90 = £75 3s.

The above is exclusive of cost of provisions, stores, postages, carriage hire, water, 2½ per cent. commission on freight, 3 per cent. sea insurance, sundries, etc., which brought the total amount to 3,216 fl., equal to £268 0s.

Pro Forma Charges of a steamer of 2,004 net register tons, from Batavia, Sourabaya, and Pasuruan, from Batoum to Batavia, with 100,000 cases of petroleum. 50,000 cases were discharged at Batavia, and the remainder were discharged at Sourabaya. There she loaded 3,100 tons of sugar, and 900 tons more were loaded at Pasuruan, so that she loaded altogether 4,000 tons net sugar.

East Indian Archipelago—Batavia (*continued*).

Expenses in Batavia—		Fl.	c.
Pilotage from Anjer to Batavia		60	00
Telegrams		34	00
Boatman, 11 days		44	00
Discharging 50,000 cases at 2½ c. per case		1,250	00
Harbour dues		964	79
Clearance stamps		3	00
Surveyor of hatches		40	00
Postage		2	00
		2,397	79

Expenses in Sourabaya—			
Pilotage inwards, 16½ ft.		140	00
Telegrams		82	00
Boatman, 18 days at 2½ fl. per day		45	00
Discharging 50,168 cases petroleum, at 8 fl. per 1,000		401	34
Clearing holds, and disinfecting for loading sugar		66	00
Survey for loading		48	00
40 tons water for boilers, at 2 fl. per ton		80	00
Pilotage outwards, 20 ft.		217	00
Gratuity to same for passing the bar		20	00
Postage		2	30
Loading 3,100 tons sugar, at 35 c. per ton		1,085	00
Clearance		5	00
American bill of health		20	00
Rating chronometer		15	00
		2,226	64

Expenses in Pasuruan—			
Water for drinking, 14 tons		37	50
Clearance		16	55
Telegram		15	00
Boatman, 6 days, at 2½ fl.		15	00
Stamps, etc.		10	40
2½ per cent. commission on £6,750 freight, at 12-27½ fl. per £		2,071	40
1½ per cent. insurance on 2,571.29 fl. advance		38	56
Loading 900 tons sugar, at 40 c. per ton		360	00
Pasuruan		2,564	41
Sourabaya		2,226	64
Batavia		2,397	79
		7,188	84 = £599 1s. 5d.

The baskets in which the sugar is packed are not calculated in the weight, so the vessel has to carry them gratis. The tare is about 6 per cent., so instead of 4,000 tons this steamer had on board 4,240 tons weight.

BELAWAN.

Belawan, in lat. 3°48' N., long. 98°39' E., is on the Island of Sumatra.

Imports.—Rice and other food, building materials, etc.

Exports.—Tobacco, coffee, tapioca, etc.

Accommodation.—There is a depth of 13½ ft. at high water spring tides on the bar, and of 6½ ft. at low water; at neap tides there is a depth of 11 ft. at high water and 8 feet at low water. The bar is soft mud and sand. The depths during the N.E. monsoon (October to March) are less. The bar is 2½ miles from the mouth of the river, and the town is 3 miles up the river. There is 3 to 7 fathoms in the river. There are five piers at the port, at all of which there is not less than 12 ft. of water at low springs, and 20 ft. at high water.

East Indian Archipelago—Belawan (*continued*).

The channel is well buoyed, and at night there is one lightship and two light buoys.

Railway communication with Medan, Tandjong, Pangkalan, Brandan, etc.

Pilotage.—Not necessary.

Port Charges.—**Harbour and Anchorage Dues** :—16 c. per net cubic metre (available for 6 months). **Clearance Fees** :—150 fl. for certificate. **Labour** :—About 1 dol. per coolie per day.

BENCOOLEN.

Bencoolen, or Benkoelen, in lat. $3^{\circ}45'$ S., long. $102^{\circ}19'$ E., is on the S.W. coast of the Island of Sumatra.

Population.—8,000.

Imports.—Opium and Indian and European manufactured goods.

Exports.—Rice, coffee, spices, camphor, and gold dust.

Accommodation.—The anchorage is in 11 to 12 fathoms, between Rat Island and the town, about 2 miles off. From September to March a heavy sea frequently rolls into the roadstead, making ships labour greatly at their anchors. Good fresh water is not to be had, and provisions are dear.

BEZUKIE.

Bezukie, in lat. $7^{\circ}45'$ S., long. $113^{\circ}40'$ E., is on the north-east coast of Java.

The anchorage is about a mile off shore, in 9 to 10 fathoms of water.

BOELECOMBA.

Boelecomba, in lat. $5^{\circ}28'$ S., long. $120^{\circ}12'$ E., is situated on the S. coast of the Island of Celebes.

Accommodation.—The best anchorage is in about 5 fathoms, with Boelecomba Hill bearing N.N.W. by compass, and about $\frac{3}{4}$ of a mile off shore.

Good fresh water can be obtained by ship's own boats, and poultry, cabbages, potatoes, fruit, etc., are plentiful and cheap.

CHERIBON.

Cheribon, in lat. $6^{\circ}40'$ S., long. $108^{\circ}25'$ E., is on the north coast of Java.

Population.—About 24,000.

Exports.—Sugar, arachides, coffee, teak, timber, copra, etc.

Accommodation.—The anchorage in the roadstead is in $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms, about 2 miles off, and affords good shelter from westerly wind. Small vessels anchor in $2\frac{1}{4}$ to 3 fathoms, about $\frac{1}{2}$ mile off shore. During the N.W. monsoon this roadstead affords a good shelter from high seas.

This port is open to export and import trade.

DELI.

Deli, state of, on the Island of Sumatra, is situated in lat. $3^{\circ}47'$ N., long. $98^{\circ}40'$ E.

Population.—55,000. See **Belawan**.

East Indian Archipelago.

GORONTALO.

Gorontalo, in lat. $0^{\circ}35'$ N., long. $123^{\circ}0'$ E., is on the Island of Celebes.

Imports.—Rice, cotton goods, etc.

Exports.—Copra, rattans, damar, and gum copal.

Accommodation.—The port of Gorontalo is a narrow bay, with deep water, and steamers generally anchor in 25 to 35 fathoms. The entrance to the port is marked by a lighthouse, and inside the harbour itself there are two buoys.

Pilotage.—Not compulsory.

Port Charges.—**Clearance Fees:**—1 fl. 50 c. **Labour:**—1 fl. **Harbour and Anchorage Dues:**—16 c. per cubic metre.

INDRAMAYOE.

Indramayoe, on the north-west coast of Java, is in lat. $6^{\circ}12'$ S., long. $108^{\circ}20'$ E.

Accommodation.—There is good anchorage in 4 to 5 fathoms on the western side of the point. It is not safe during the N.W. monsoon.

KEMA.

Kema, in lat. $1^{\circ}23'$ N., long. $125^{\circ}5'$ E., is situated on the southern coast of the north arm of Celebes.

Accommodation.—There is good anchorage in 8 to 10 fathoms of water. This place is of little importance, except for steamers, which, during the months from November to February, call here instead of at Menado, if the weather at the latter port does not permit loading and discharging. There is a Government coaling station available for merchant vessels. No steamers call regularly, and the harbour is only frequented by native vessels. Postal communication via Menado.

Provisions can only be obtained with difficulty, there being no shops.

KUPANG.

Kupang, or Coupang, in lat. $10^{\circ}10'$ S., long. $123^{\circ}40'$ E., is situated on the W. coast of Timor.

Population.—About 10,000.

Exports.—Copra, wax, coffee, shells, maize, spices, sandal-wood, etc.

Accommodation.—The anchorage is in about 16 to 20 fathoms, and is considered perfectly safe from May 1 to the end of October. There is 16 fathoms close to the shore. The bay is well sheltered.

Cattle, poultry, and fruits can be obtained, and also good water.

The climate is unhealthy from November to April.

MACASSAR.

Macassar, or Vlaardingen, in lat. $5^{\circ}10'$ S., long. $119^{\circ}32'$ E., is situated on the island of Celebes, at the entrance of the Macassar Strait.

Population.—25,800.

Imports.—All kinds of European merchandise.

Exports.—Coffee, tortoise-shell, mother-of-pearl, pearls, gold dust, wood, rattans, copra, etc.

East Indian Archipelago—Macassar (*continued*).

Accommodation.—The anchorage, in 4 to 10 fathoms close to the shore, is considered one of the best in the Archipelago, especially during the S.E. monsoon. There is 23 to 25 ft. of water alongside the piers, of which there are eight, each about 225 ft. long. The climate is healthy. The best season to load for Europe is from March to September. The rise and fall of the tide is 5 ft. The depth available for vessels entering the port is 60 ft.

With the introduction of Customs and Excise in Celebes and dependencies, harbour and anchor dues have been collected. The Dutch Government has built a wharf about 1,640 ft. long, which replaces the eight piers which were formerly in use. The new wharf affords much better facilities for loading and discharging, especially for large steamers.

In entering all vessels must hoist their national flags, and a correct description of the ship and her destination must be handed to the officers who board the vessel.

Pilotage.—Vessels under 500 cubic metres, 2 fl. 50 c. ; from 500 to 1,500 cubic metres, 5 fl. ; from 1,500 to 2,500 cubic metres, 10 fl.

Port Charges.—**Quay Dues** :—1 c. per day per cubic metre for vessels over 20 tons. **Light Dues** :—Vessels under 2,000 cubic metres 50 c. per day ; vessels from 2,000 to 5,000 cubic metres, 1 fl. ; vessels over 5,000 cubic metres, 1 fl. 50 c. **Sand Ballast** :—1s. per ton.

MENADO.

Menado, in lat. $1^{\circ}29' N.$, long. $124^{\circ}50' E.$, is situated on the north coast of the Celebes. It is the largest settlement of Northern Celebes.

Population.—10,000.

Imports.—All kinds of European merchandise.

Exports.—Copra, coffee, nutmegs, timber, gum copal, rattans, etc.

Accommodation.—There is no protected harbour, and ships have to anchor in an open roadstead, in 40 to 50 fathoms of water. From November to February the port is exposed to westerly winds, and high rollers sometimes prevail, but a ship carefully anchored has nothing to fear. Steamer sometimes during these months call at Kema instead of here. Rise of tide about 7 or 8 ft. Loading and discharging is done by means of lighters.

Poultry, fresh vegetables, and fresh meat can be obtained. Fresh water in abundance.

Pilotage.—Not compulsory. A Chinese pilot usually meets vessels and, if requested, takes them into port.

Port Charges.—**Harbour Dues** :—16 c. per cubic metre for months. **Ballast** :—Sand and stone ballast can be obtained at a cost of about 3 fl. per ton.

MOEARA KOMPEH.

Moeara Kompeh, or Muara Kompeh, in the island of Sumatra, is in lat. $1^{\circ}15' S.$, long. $104^{\circ}3' E.$

Accommodation.—This town is situated on the Gambia River about 25 miles from the entrance. There is a good depth of water leading up to the town, but only 9 ft. on the bar.

East Indian Archipelago.

MUNTOK.

Muntok, in lat. $2^{\circ}5' S.$, long. $105^{\circ}15' E.$, is the capital of the island of Banka. It is open to import and export trade.

Accommodation.—There is a pier, about $\frac{1}{2}$ a mile long, which runs out to the edge of the bank. The usual anchorage for merchant vessels is in $4\frac{1}{2}$ to 5 fathoms, off the pier head. The mail steamers running twice a month between Batavia and Singapore always call here.

OLEHLEH.

Olehleh, in lat. $5^{\circ}37' N.$, long. $95^{\circ}12' E.$, is situated at the N.W. extremity of the Island of Sumatra. Distance from Liverpool by sea, 10,995 miles; via Suez Canal, 7,635.

Population.—502,000 (District of Acheen).

Exports.—Pepper, betel-root, camphor, etc.

Accommodation.—The anchorage outside is safe, in 4 to 5 fathoms, sand and mud bottom.

Small supplies of provisions may be procured. Foreign vessels are not allowed to trade on the coast.

PADANG.

Padang, on the west coast of the Island of Sumatra, is situated on the north side of a small river, in lat. $0^{\circ}58' S.$, long. $100^{\circ}22' E.$

Population.—40,000.

Imports.—General merchandise.

Exports.—Coal, coffee, copra, rattan, hides, etc.

Accommodation.—There is a depth of 10 ft. at high water on the bar of the river. The usual anchorage is between Pulo Pisang and the mainland, close to the former, in 6 fathoms. On Pulo Pisang the Government and Netherlands India Steam Navigation Company have their coal sheds, and vessels with coal discharge the same at the piers in perfect safety. The harbour of Emmahaven can accommodate vessels drawing not more than 7.5 metres ($24\frac{1}{2}$ ft.). There are four wharves, three of which are long enough to accommodate vessels 400 ft. in length. The harbour is connected by railway with Padang, and with the interior of the country.

Vessels can be bunkered at the rate of 100 tons per hour, but coal is not always obtainable, as the demand is sometimes greater than the supply. There are three cranes to lift from 2 to 4 tons on the wharf.

Pilotage.—Compulsory. 10 guilders per 1,000 net reg. cubic metres.

Port Charges.—**Wharfage** :—Steamers, $\frac{1}{2}$ c. per cubic metre for 2 hours; sailing vessels free. **Towage** :—Sailing vessels, into or out of harbour, 70 fl. in and 70 fl. out. **Mooring and Unmooring** :—The Government's tug moors and unmoors steamers free of charge. **Boat Hire** :—8 fl. **Harbour and Anchorage Dues** :—16 c. per net reg. cubic metre (payable once in 6 months). **Labour** :—1 fl. per coolie per day; night time, 1 fl. 50 c. per coolie. **Brokerage** :—From $2\frac{1}{2}$ to 5 per cent.

Vessels calling for bunker coal only do not pay wharfage, harbour, or anchorage dues. Vessels calling for water only are exempt from paying harbour and anchorage dues.

Fresh water can be obtained at 1 fl. per ton.

East Indian Archipelago.

PALEMBANG.

Palembang, in lat. $2^{\circ}55'$ S., long. $104^{\circ}50'$ E., is the largest town in Sumatra. It is situated on the Moesi or Palembang River, about 50 nautical miles from its mouth.

Population.—About 70,000.

Imports.—Matches, rice, native and Chinese victuals, articles of clothing, machinery, etc.

Exports.—Petroleum and other products of crude oil, rattan, damar gutta-percha, various kind of wood, kapas, and kapok.

Accommodation.—Vessels coming here have to cross three bars—the outside bar, the bar at Pajong Island (Pulu Pajong), and the Salat Djaran bar. The depth of water on these bars is as follows :—

DEPTH OF WATER ON THE BARS OF THE PALEMBANG RIVER.

OUTSIDE BAR.				PULU PAJONG BAR.				SALAT DJARAN BAR.			
Spring Tide.		Dead Tide.		Spring Tide.		Dead Tide.		Spring Tide.		Dead Tide.	
Low Water.	High Water.	Low Water.	High Water.	Low Water.	High Water.	Low Water.	High Water.	Low Water.	High Water.	Low Water.	High Water.
Feet. 10	Feet. 21½*	Feet. 14	Feet. 18	Feet. 12	Feet. 24	Feet. 14	Feet. 19	Feet. 11	Feet. 23	Feet. 14	Feet. 19
	20†								26‡		

* In west monsoon with much river water (rainy season—November to March).

† In east, or dry monsoon, without much river water.

‡ With much river water only.

The river is well buoyed.

Pilotage.—For the whole distance from the light-vessel to Palembang 3 c. per cubic metre net tonnage ; vessels up to 1,000 cubic metres, 5 fl. from 1,001 to 1,500, 10 fl. ; from 1,501 to 2,000, 15 fl. ; over 2,000 cubic metres 20 fl. Vessels not navigating the whole river up to Palembang, pay one-tenth of the full pilotage charges for every 6 nautical miles, or part thereof.

Pilotage is payable both in and out of port.

Pilots can be obtained at the pilotship or lightship, which is painted black with the word "Palembang," painted in white ; there is a white light on it at night, visible 13 miles.

Port Charges.—**Harbour and Anchorage Dues** :—16 c. per net cubic metre (payable once in 6 months). **Towage** :—10 guilders per hour or 85 guilders per 24 hours. **Custom House Dues** (for watching fees) :—About 10 guilders per 12 hours.

PANARUKAN.

Panarukan, in lat. $7^{\circ}44'$ S., long. $113^{\circ}59'$ E., is on the north-east coast of Java.

Accommodation.—There is good anchorage in 17 to 18 fathom water, a mile from the shore. The roadstead is open and dangerous in the N.W. monsoon.

Good fresh water and beef can be obtained here, but fowls and other provisions are scarce.

East Indian Archipelago.

PANGOOL.

Pangool, on the south coast of Java, is in lat. $8^{\circ}14'$ S., long. $111^{\circ}25'$ E.

Accommodation.—There is good anchorage during the eastern monsoon, in 7 to 5 fathoms, sand and clay bottom. There is a pier which facilitates loading and discharging.

PASURUAN.

Pasuruan, in lat. $7^{\circ}40'$ S., long. $112^{\circ}52'$ E., is situated on the north-east coast of Java.

Population.—1,824,467 (province). Town population about 26,000.

Import.—Coal.

Exports.—Sugar, coffee, and tobacco.

Accommodation.—The anchorage is in 5 to 6 fathoms, mud bottom, about 3 or 4 miles from the shore. This is one of the worst places in Java for communication with the land. It is only possible to get on shore 4 hours before and 2 hours after high water.

Pilots can be obtained here for Sourabaya.

Port Charges.—**Tindal** :—1 fl. per day. **Provisions** :—Fresh meat, 10 c.; mutton, 40 c.; pork, 45 c. per lb. Sweet potatoes and yams, 3 fl. per picul. **Coolie Hire** :—60 c. per day.

PATJITAN BAY.

Patjitan Bay, in lat. $8^{\circ}15'$ S., long. $111^{\circ}6'$ E., lies on the south coast of Java.

Accommodation.—The anchorage has good holding ground in 8 to 14 fathoms, but there is always a high swell from the S., which causes vessels to roll heavily.

PEKALONGAN.

Pekalongan, on the north coast of Java, is in lat. $6^{\circ}51'$ S., long. $109^{\circ}43'$ E.

Accommodation.—The anchorage is in $3\frac{1}{2}$ to $4\frac{3}{4}$ fathoms, soft ground, with the lighthouse bearing E. in the east monsoon, and W. in the west monsoon.

PONTIANAK.

Pontianak, in lat. $0^{\circ}5'$ S., long. $109^{\circ}18'$ E., is on the west coast of Borneo.

Population.—27,100.

Imports.—Cloth, rice, etc.

Exports.—Copra, rattan, gambier, cutch, damar, etc.

Accommodation.—There is one Government wharf here, with a depth of 11 ft. alongside at low tide. The river is deep. The small local steamers take the produce to Singapore and Batavia for transshipment to Europe. There are two local oil mills.

*East Indian Archipelago.***PROBOLINGO.**

Probolingo, in lat. $7^{\circ}46'$ S., long. $113^{\circ}13'$ E., is situated on the north-east coast of Java.

Population.—13,240.

Exports.—Castor oil seeds, kratok beans, goatskins, hides, tobacco, coffee, sugar, teak wood, etc.

Accommodation.—There is good anchorage in $6\frac{1}{2}$ fathoms about $\frac{1}{2}$ a mile off the shore. There is railway communication with Sourabaya. Provisions can be obtained here.

REMBANG.

Rembang is at the mouth of the river Solo, on the north coast of Java in lat. $6^{\circ}45'$ S., long. $111^{\circ}47'$ E. The anchorage is in 4 fathoms, about 2 miles from the shore.

SABANG.

Sabang, in lat. $5^{\circ}50'$ N., long. $95^{\circ}20'$ E., is on the north coast of the Island of Pulo Weh, 28 nautical miles off the north point of Sumatra.

Accommodation.—Sabang Bay is free from obstructions, and its entrance is 750 metres (2,458 ft.) wide, so that the harbour can be entered by night as well as by day without the aid of a pilot, although steam launch is always kept in readiness to render assistance if required. Steamers arriving at night are advised to keep to the south side of the entrance, in order to keep clear of the floating dry dock. There is a clear anchorage of 1,500 metres (4,916 ft.) long by 900 metres (2,950 ft.) broad ranging in depth from 10 to 20 fathoms, up to within about 100 metres (327 ft.) off the shore; bottom sand and coral.

There is a flashing white light on the S.W. point of the entrance, on a small island called Klas, visible 15 miles, and a red light on the N.E. point of the entrance, visible 8 miles. The red light on the top of a shed opposite the entrance shows the limit of the bay. Both piers and mooring buoys are lighted by white lamps and lanterns, allowing steamers to moor by night. There is also a flashing white light at the N.E. point of the island.

There is a floating dock capable of taking vessels up to 2,800 tons displacement. It is 295 ft. in length, 67 ft. wide at the entrance, and has a depth of $20\frac{1}{2}$ ft. on the sill; being open both fore and aft, vessels up to 300 ft. in length can be docked. A slip is always available for taking lighters or small craft.

Small repairs to steamers, engines, and boilers can be executed. There are private iron wharves of a total length of 2,300 ft., thirteen double sheds for storage of coal, three large godowns, covering 45,000 sq. ft., besides some smaller sheds, five mooring buoys, four electric transporters etc. This is a coaling station, and a large stock of coal is always kept, and every facility exists for the bunkering of vessels, and the quick dispatch of cargo. Steamers requiring coal should go alongside the wharf immediately on arrival. Coal can be discharged at the rate of 1,000 to 2,000 tons daily. There are four electric cranes.

East Indian Archipelago—Sabang (*continued*).

All steamers arriving off the port are reported by the Signal Station on the hill of Udjong Periampuan by telephone to the settlement.

Regular fortnightly steamship communication with Genoa, Southampton, and Amsterdam, and weekly communication with Penang, Singapore, Batavia, and the west coast of Sumatra.

Telegraphic communication with all parts of the world.

Port Charges.—Harbour Dues :—Vessels calling here for coaling, docking, or for cargo, are exempt from any charges whatever ; when calling for the purpose of coaling and taking in water, stores or provisions only, no wharfage is levied. A minimum charge of £5 for pilotage and dues is levied on steamers calling for other purposes than coaling, docking, or loading cargo. **Bill of Health :**—Free.

Dock Charges.—First 2 days (vessels docking for painting first 3 days), minimum, 100 fl. ; 0.25 fl. extra per ton gross tonnage over 200 tons. Each following day, half the amount for first 2 (3) days. Days of entering and day of leaving dock to count one day. Charges for cleaning and painting with two coats of patent paint, minimum, 150 fl., and 0.40 fl. extra per ton gross tonnage over 200 tons.

Water :—The supply of fresh water is abundant. It is conveyed by means of pipe lines and can be supplied to any part of the ship through canvas hose. To vessels at anchor in the bay water is carried in a water boat fitted with steam pumps. Price, same as at Singapore and Penang.

Ships' stores, provisions, and ice can be obtained at reasonable prices.

SAMARANG.

Samarang, on the north coast of Java, is in lat. 7°0' S., long. 110°23' E.

Population.—96,600.

Exports.—Coffee, sugar, indigo, tobacco, and rice.

Accommodation.—Samarang port is formed by the mouth of the river of the same name, but can only be entered by small vessels. The depth of water at the entrance at ordinary springs, high water, is 7½ ft. ; low water, 5½ ft. There is 4,800 ft. of quayage, with a depth alongside at high water ordinary springs of 8½ ft. There are two cranes capable of lifting from 3 to 10 tons each. Large vessels anchor outside.

SOURABAYA.

Sourabaya, in lat. 7°18' S., long. 112°40' E., is one of the chief towns on the island of Java.

Population.—150,198.

Imports.—Calico goods, canvas, glass wares, porcelain, paper, iron, petroleum, coal, candles, etc.

Exports.—Sugar, rice, coffee, hides, indigo, tobacco, arrack, pepper, etc.

Accommodation.—Vessels anchor in the roads to the north of the town in 6 to 10 fathoms of water ; good holding ground. There are two entrances to the port, both having bars. The water on the bar at the eastern entrance is about 21 or 22 ft. at high water springs, and at the western entrance 17½ to 18½ ft. At neap tides there is about 3 ft. less water at the western entrance, and 2 ft. less at the eastern entrance. The rise and fall

East Indian Archipelago—Sourabaya (continued).

during spring tides is about 9 ft. in the eastern and 6 ft. in the western channel. Vessels are discharged by means of cargo boats, varying in size from 10 to 60 tons. There is a naval basin here which can be entered by vessels drawing 18 ft. of water.

There are two floating docks belonging to the Government, but they are available for merchant vessels when not required for Government work. There are two patent slips and a torpedo boat slip.

Docks, etc.	Length over all in feet.	Width of Entrance in feet.	Depth on the Sill in feet.	Lifting Power in tons.
Government Iron Floating .	322	62	22½	4,800
Government Floating . . .	196	59	16	1,350
Patent Slip	200 (cradle)	—	Forward 8½ on Aft 12½ blocks	700
Patent Slip	80 „	—	Forward 6½ on Aft 10½ blocks	150

The Government undertake extensive repairs when not busy. There are many other firms, but they chiefly confine themselves to sugar machinery. Cranes to lift 50, 15, 12, 12, and 9 tons, and sheer legs to lift 80 and 60 tons.

The river is broad, and at high water there is sufficient depth for large lighters and square rigged coasting vessels, which come in to be careened and repaired at low water, but great care is required in entering the river even with boats, as sometimes there is only 2 ft.—generally from 3 to 4 ft.—of water on the bank, and if not kept in mid-channel, they may be upset by the current.

Various schemes for the improvement of this port have been under consideration recently, but nothing has been definitely decided.

Time Signals.—Four black discs fall from the vertical into the horizontal position at noon Sourabaya mean time, equal to 16 h. 29 m. 2·6 s. Greenwich mean time. The signal is made from a mast on the western mole, head of Kalimas River.

Lighterage.—About 1s. 8d. per ton of cargo.

TANDJONG PRIOK.

Tandjong Priok, in lat. 6°5' S., long. 106°53' E., is 6 miles from Batavia.

Export.—Coal.

Accommodation.—This harbour is 4,000 ft. long and 500 ft. wide, and with 4,000 ft. of quayage. There is a basin 1,500 ft. long, 500 ft. wide at the entrance, and having 1,500 ft. of quayage. There is 28 ft. of water at ordinary spring tides, and 24 ft. at ordinary neap tides. Coal can be shipped at the rate of from 60 to 100 tons per hour. There is one crane to lift from 25 to 30 tons.

Time Signals.—Four boards are inclined at an angle of 45° on an iron support near the entrance of the inner basin, 79 ft. above high water, at 5 minutes before the signal. The boards are placed vertical at 2 minutes before the signal, and fall into a horizontal position at noon, Tandjong Priok mean time. The signal is repeated at 1 h. 7 m. 32·6 s. p.m., Tandjong Priok mean time, which corresponds to 6 h. 0 m. 0 s. a.m., Greenwich mean time. The signal is not made on Sundays or holidays. Should a blue flag

East Indian Archipelago—Tandjong Priok (*continued*).

be hoisted, it indicates that the apparatus is out of order, and that no further signals can be made on that day.

Pilotage.—Vessels of 100 to 500 cubic metres, 2 fl. 50 c.; 501 to 1,500 cubic metres, 5 fl.; 1,501 to 2,500, 10 fl.; and 5 fl. additional for every 1,000 cubic metres more. Double pilotage is charged at night; no pilotage for shifting in port.

Port Charges.—See **Dutch Possessions.** **Quay Dues:**—According to the length of quay occupied. Steamers 30 to 40 metres, 17 fl. 50 c.; and 2 fl. 50 c. additional for every 10 metres. Sailing vessels pay half quay dues.

TEGAL.

Tegal is in lat. $6^{\circ}55'$ S., long. $109^{\circ}10'$ E., on the north coast of Java.

Accommodation.—This is an open roadstead. The anchorage is in $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms, soft ground, with the lighthouse bearing S. to S.S.W., in the east monsoon, and S. only in the west monsoon.

This port is open for general imports and exports.

TELOK BETONG.

Telok Betong, in lat. $5^{\circ}20'$ S., long. $105^{\circ}48'$ E., is the chief town of Lampong Bay, an inlet on the south-east coast of Sumatra.

Export.—Tobacco.

Accommodation.—Vessels anchor close to the shore, in 13 fathoms. This port is not visited by Europeans.

Fresh provisions cannot be obtained.

TERNATE ISLAND.

Ternate is the principal island of the Molucca group. The town is on the E. side, in lat. $0^{\circ}45'$ N., long. $127^{\circ}18'$ E.

Accommodation.—The anchorage is abreast the town in about 5 fathoms. Vessels making more than a temporary stay should moor. Coal can be obtained. Vessels go alongside a pier to take it in. There is a depth of 5 fathoms at the pier end. Loading and discharging can be done alongside the Government landing quay. There is no bar. Fresh water is generally scarce, and it takes a few days to get a sufficient supply.

TJILATJAP.

Tjilatjap is in lat. $7^{\circ}41'$ S., long. $109^{\circ}5'$ E.

Accommodation.—This is the most important port on the south coast of Java. A pilot is necessary, and one comes on board on making the usual signal. There is good anchorage in 5 to 6 fathoms, and a pier from which cargoes can be shipped with great facility.

Fresh water and provisions can be procured, and also ships' stores.

The climate is unhealthy.

WYNKOOPS BAY.

Wynkoops Bay, Java, is in lat. $6^{\circ}59'$ S., long. $106^{\circ}35'$ E.

Accommodation.—Anchorage is in 8 fathoms, bottom of clay and sand about a mile from shore.

THE PHILIPPINE ISLANDS.

The Philippine Islands, which form the most northerly portion of the East Indian Archipelago, were ceded to the United States by Spain in December, 1898. The group is composed of over 1,200 islands and about 2,000 islets, separated by narrow channels; these have a total area of 115,026 square miles, with a population, according to the census taken in 1903, of 7,635,426, of whom 56,138 are foreign born.

Commerce.—The total trade of the islands is of an annual value of a little over thirteen million pounds sterling, the returns for the fiscal year 1907 showing imports valued at £6,266,218, and exports at £6,820,260. The imports comprised cotton and cotton goods, rice, iron and steel, meat and dairy products, animals, wheat flour, mineral oils, leather, vegetables, paper, spirits, wines and malt liquors, opium, wood, and manufactured articles generally; the exports being principally made up of hemp, sugar, copra, tobacco, and its manufactures. The customs duties collected during 1907 amounted to £1,285,643, the merchandise on which the duties were levied having been conveyed by 8,496 vessels of 2,214,491 tons.

Internal Communications.—Under the government established by the authority of the United States, the means of communication have been considerably improved; railways are being constructed, under government guarantee, on the islands of Luzon, Panay, Negros, and Cebu; roads constructed and repaired, and the post and telegraph services reorganized on modern lines. Submarine cables connect the islands of Luzon, Cebu, Negros, and Panay with America and Europe.

Currency, Weights and Measures.—Under the provision of the Currency Law, which came into force in June, 1904, the monetary unit of the islands is the Filipino dollar or peso of 100 c., 9.72 pesos = £1 sterling. There are five banks doing business in the islands: the Chinese Bank, the International Banking Corporation, Hong Kong and Shanghai Bank, the Chartered Bank of India, Australia, and China, and the Banco Español Filipino.

The following weights and measures are generally used in commercial transactions:—

1 picul = 100 catties = about 63½ kilos., or 140 lb. British.

1 cavan (of rice) = 123 to 125 lb. British, according to quality and season.

1 quintal = 100 lb. Spanish, or 102 lb. British (nearly).

A ton of 2,240 lb. is estimated to measure: Wet sugar, 35 cubic ft. dry sugar, 50 to 55 cubic ft.; hemp, 90 to 96 cubic ft.; sapan-wood, 10 cubic ft.; coffee, 55 cubic ft.; leaf tobacco, 90 cubic ft.; copra (in bags) 83 cubic ft.; and copra in bulk, 70 cubic ft. For Custom House purposes the following equivalents are in force: Metre, 39.37 in.; litre, 1.057 quarts, wine measure; kilo., 2.206 lb. avoirdupois.

Port Charges.—Wharfage and Harbour Dues.—On export 1 peso per 1,000 kilos. gross for wharfage, and 50 c. per 1,000 kilos. for harbour dues. Goods imported for transshipment pay 50 c. per 1,000 kilos. gross for wharfage at the port of transshipment. Other charges are uniform for all ports of entry in the Philippine Islands, as follows: Entrance of a foreign vessel, 4 pesos; clearance, 4 pesos; bill of health, 1 peso; passenger manifest, 1 peso. There are no tonnage dues.

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The ports of entry are Manila, Cebu, Iloilo, Zamboanga, Balabac, Davao, and Sulu or Jolo.

Harbour Regulations.—All vessels, on entering any port of entry or harbour, must show their colours and keep them flying until boarded by the proper officials. Merchant vessels entering Manila Bay show their colours before passing Corregidor Island, and if provided with numbers or letters, signal to the station on that island when passing.

All vessels entering a harbour are considered in quarantine until boarded by the quarantine officer and given pratique by him. Until pratique has been given, the prescribed quarantine flag is to be kept flying at the fore.

Should a pilot be required by any vessel, a regularly licensed pilot will be furnished upon the display of the proper signal, or upon application being made at the pilot station. Signal by day, international letter S; at night, Bengal light, which may be preceded by two whistles.

Masters of vessels desiring to load or discharge ballast must first obtain permission to do so, and also obey the instructions given them by the customs authorities as to where the ballast is to be taken from or dumped, as the case may be.

The following typhoon signals will be displayed when occasion requires :—

Day Signals.—Black cylinder, $1\frac{1}{2}$ ft. in diameter, 2 ft. high. Black cone, base $1\frac{1}{2}$ ft. in diameter, 2 ft. high. Black sphere 2 ft. in diameter. Flag or 4 ft. square, of any convenient colour, arranged above sphere.

Night Signals.—Red and white lights in either vertical or horizontal line, arranged as follows : Two white lights. One red and one white light. Two red lights. Three white lights. White, red, and white lights. Red, red and white lights. Red, white, and red lights. Three red lights.

First Signal.—The meaning of the first signal is necessarily somewhat indeterminate. It signifies a general warning, viz., that the weather conditions are dangerous, but such as are not covered by any of the signals in use.

Second Signal.—The centre of the typhoon will pass (or is passing) to the northward at a considerable distance. Winds from the third quadrant (west to south) are to be expected, which may acquire considerable force and continue for several days.

Third Signal.—The centre of the typhoon will pass (or is passing) to the southward at a considerable distance. Winds from the second quadrant (east to south) are to be expected. These are generally less violent than those corresponding to the second signal.

Fourth Signal.—The location of the typhoon centre is dangerous for this place, though the danger is not imminent. Look out for the next signal.

Fifth Signal.—The centre of the typhoon will pass (or is passing) to the northward at a short distance. Strong winds from the third and fourth quadrants (south over west to north) are to be expected, which may become very violent.

Sixth Signal.—The centre of the typhoon will pass (or is passing) to the southward at a short distance. Strong winds from the first and second quadrants (north over east to south) are to be expected, which may become very violent, though usually they are less severe than those corresponding to the fifth signal.

East Indian Archipelago.

Seventh Signal.—The centre of the typhoon will pass over this place.

Eighth Signal.—Strong winds, very high tides, and floods. The meaning of the above typhoon signals is the same wherever shown in the ports of the islands.

Customs Regulations.—Every vessel will, upon arrival, be placed under Customs control until duly discharged. Passengers with no dutiable property in their possession are permitted to land without detention. If any merchandise be found on board any vessel which is not included in her manifest produced as required by the regulations, the master forfeits an amount equal to the value of the merchandise not manifested, while all merchandise belonging to, or consigned to, the officers or crew of the vessel is also forfeited. The forfeitures are not incurred, however, if it is made to appear to the principal Customs officer at the port that the errors and omissions in the manifest were made without intention of fraud or collusion. In such case the master will be allowed to correct his manifest by means of a post entry. Should any package or article named on the manifest be missing on the arrival of the vessel, or the merchandise on board not otherwise agree with the manifest delivered by the master, except as above prescribed, the master is liable to a penalty of five hundred dollars, but if it is made to appear to the satisfaction of the principal Customs officer at the port that no part whatever of the merchandise of such vessel has been unshipped, landed, or unladen since it was taken on board, except as specified in the manifest, and pursuant to permits, or that the disagreement was by accident or mistake, in such case the penalty is not inflicted.

Within twenty-four hours after the arrival of any vessel the master must, under a penalty for failure of 1 peso per ton register measurement produce to the proper officer a manifest of her cargo, with the marks, numbers, and description of the packages and the names of the respective consignees, which manifests, if the vessel be from a port in the United States, are to be certified by the Collector of the port of sailing. If the vessel be from any other than a United States port, her manifest must be certified by the United States Consul or commercial agent at such port if there be no United States Consul or commercial agent at such port then by the Consul of any nation at peace with the United States; and the register of the vessel must, upon her arrival in the Philippines, be deposited with the Consul of the nation to which she may belong, if any there be, otherwise with the commandant at the port, until the master shall have paid such taxes and other port charges as may be due.

No vessel is allowed to clear for another port until all her cargo has been landed or accounted for. All goods not duly entered within ten days after their arrival in port are to be landed and stored, the expenses thereof to be charged against the goods.

Prior to the departure of any vessel from any of the ports of entry the master must deposit with the proper officer a manifest, in duplicate of the outward cargo of such vessel, specifying marks and numbers of packages, a description of their contents, with names of shippers and consignees, with a statement of the value of each separate lot; also names of passengers and their destination. A clearance will then be granted to the vessel. No prohibited or contraband goods may be exported.

Emigration and Immigration.—The general emigration and immigration law of the United States is in force in the Philippine Islands.

East Indian Archipelago.

head tax of 8 pesos being collected on account of each alien immigrant, subject to the exceptions provided for in the American law.

CAVITE.

Cavite, in lat. $14^{\circ}30'$ N., long. $120^{\circ}53'$ E., is about 6 miles from Manila which it is the marine arsenal and port.

Population.—5,000.

Accommodation.—Cavite is a well-sheltered harbour, with 4 to 5 fathoms of water, soft mud bottom. Ships are built here, and every convenience exists for vessels being hove down. The largest slip has a length of 820 ft. ; length of cradle, 270 ft. ; draught on the keel blocks at high water ordinary spring tides, 8 ft. forward, and 18 ft. aft. The repairing shops include plating and boiler shop, smithy, foundry, fitting shop, carpenter's shop, and saw-mill, with a full equipment of appliances for every class of repairs to steamers and sailing ships—wood and iron. Large vessels often unload here during the S.W. monsoon—July to September. Provisions and coal are dear. The U.S. Government (Navy Department) have a floating dock at Olongapo, Subig Bay, with a lifting power of 16,000 tons ; 500 ft. long, and 100 ft. wide at the entrance.

Time Signals.—Chronometers can be checked here. A ball hoisted at the top of the Water Tower, situated 180 yards N. 57° W. from the eastern angle of Fort St. Philip. The ball is hoisted 5 minutes before the signal, and dropped at 23 h. standard time of the meridian of 10 E., equal to 15 h. 0 m. 0 s. Greenwich mean time, and 23 h. 3 m. 35 s. local mean time. There is no signal on Sunday.

Masters wishing to have barometers tested can do so by giving glass reading to the Harbour Master, who will compare the same with Observatory instruments and return correction to ship.

Port Charges.—For Harbour, Wharfage Dues, and other charges, **Philippine Islands. Lay Days :**—The following number of working days are allowed for unloading vessels in Manila Harbour :—

FOR STEAMERS.

One working day for steamers up to 100 tons carrying capacity.
Two working days for steamers from 101 to 200 tons carrying capacity.
Three working days for steamers from 201 to 400 tons carrying capacity.
Four working days for steamers above 401 tons carrying capacity.

FOR SAILING VESSELS.

At the rate of four working days for every 100 tons of cargo being unloaded. The corresponding number of days shall be allowed for the unloading of said vessels. These allowances may be increased by the Harbour Master in his discretion.

CEBU.

Cebu, Sebu, or Zebu, is on the island of the same name, in lat. $10^{\circ}20'$ long. $123^{\circ}53'$ E.

Population.—32,000.

Imports.—Rice and general cargo.

Exports.—Hemp, copra, and sugar.

Accommodation.—Vessels drawing 30 ft. can come here. The port is formed by the channel between Mactan and Cebu Islands. The practicable channel is 2 cables wide in the narrowest part and 3 cables

East Indian Archipelago—Cebu (*continued*).

wide abreast of Cebu town; the least depth is $4\frac{1}{2}$ fathoms, increasing 9 fathoms. Tides rise 5 to 8 ft. The best anchorage is S.S.W. of the fort in 5 to 7 fathoms, on mud. There is a depth alongside the wharf and seawall of 29 ft. at high water, 25 ft. at low water, and 23 ft. at lowest spring tides. Steamers drawing 24 ft. can moor alongside the wharf to load and discharge cargo. The patent slip takes vessels up to 300 tons. During N.E. monsoons vessels may moor anywhere.

The harbour is difficult of access for large sailing vessels from the north owing to the narrowness of the channel, unless with a leading wind. With a fair wind it is not dangerous, the passage between Cebu and Mactan being deep enough; it is now perfectly buoyed off. To the south the entrance is more open and easy of access, though care is requisite to avoid the Lapaz and Narvaez shoals.

Pilotage.—Compulsory, 3 dols. per foot draught. No stranger should attempt to enter without a pilot. A pilot will at once come on hoisting the usual signal.

Port Charges.—**Entrance Fees** :—4 dols. **Clearance Fees** :—Including bill of health, 5 dols. **Towage** :—As per arrangement. **Boat Hire** :—3 dols. per day. **Consular Fees** :—Entering and clearing, 8 dols. 75 c. **Ballast** :—2 dols. per ton. **Labour** :—62 c. and two meals per day. **Commission** :—On freight, $2\frac{1}{2}$ per cent.; on disbursements, $2\frac{1}{2}$ per cent. **Shifting Anchorage** :—1 dol. 50 c. per foot draught. **Stevedore** :—Loading sugar, 3 c. per bale; 30 c. per ton; hemp, 10 c. per bale; copra, 40 c. per ton. **Discharge** :—1 dol. per ton. **Provisions** are all expensive, meat being 45 c. per lb.; maize, 3 dols. 50 c. per cavan; Saigon rice, 6 dols. per picul. Vegetables are very scarce.

Pro Forma Charges on a British steamer of 1,752 tons ready for loading 14,500 bales of hemp :—

	Dols.	c.
Customs dues, inwards	4	00
Pilotage in, 14 ft. at 3 dols. per foot	42	00
Pilotage out, $20\frac{1}{2}$ ft. at 3 dols. per foot	61	50
Stevedore, etc.	1,496	00
Ship chandler's account	215	10
Consul's fee	9	55
Entering and clearing at Customs, stamps and petties	85	00

1,913 15 = £196 16s.

The season for shipping sugar is from January to August.

DAGUPAN.

Dagupan is in lat. $15^{\circ}58'$ N., long. $120^{\circ}24'$ E.

Population.—About 18,000.

Import.—Mexican agave.

Exports.—Shelled and unshelled rice, copra, sugar, tobacco, and "buri" hats.

Accommodation.—The accommodation at this port is only available for vessels drawing up to 8 ft., the depth of water being 9 ft. at high water, and 6 ft. at lowest tide, in March. There is a shifting bar.

East Indian Archipelago—Dagupan (*continued*).

Pilotage.—Steamers and Sailing vessels—From 10 to 20 tons gross, pesos, in and out; vessels from 21 to 50 tons, 6 pesos in and out. Vessels of 51 tons and over, 1 peso per foot draught. When a pilot is detained on board through quarantine or any other cause beyond his control, a charge of 5 pesos, Philippine currency, per day is made.

Port Charges.—**Boat Hire** :—Boats of 60 tons, from Dagupan to Manila, 200 pesos. **Ballast** :—Sand, $2\frac{1}{2}$ pesos per ton up to 5 pesos. **Labour** :— $\frac{1}{2}$ peso during the day, and 1 peso at night. **Brokerage** :—On a large transaction $2\frac{1}{2}$ per cent., and on a small transaction 5 per cent. **Entrance and Clearance** at Customs :—8 pesos. **Bill of Health** :—1 peso. **Wharfage and Harbour Dues.**—See **Philippine Islands**.

DUMAGUETE.

Dumaguete is in lat. $9^{\circ}22'$ N., long. $123^{\circ}18'$ E.

Population.—about 15,000.

Imports.—General merchandise.

Exports.—Copra, hemp, maize, sugar, and rattans.

Accommodation.—During the monsoons, Dumaguete offers no protection to vessels, and it is a good harbour during S.W. winds. There is a depth of 36 ft. of water, at a distance of 240 yards from the beach. There is no wharfage, vessels loading and discharging by means of lighters directly on to the beach.

Pilotage.—Nil.

Port Charges.—See **Philippine Islands**.

Labour, usually task work, 75 c. per 100 packages, from lighters to the beach.

ISABELA.

Isabela, in lat. $6^{\circ}40'$ N., long. $122^{\circ}0'$ E., is on the N.W. coast of Basilan Island.

This is a naval station and dépôt for gunboats. Although not an open port, coal can be obtained here at about 18 dols. per ton.

JOLO.

(See **Sulu** p. 1392.)

MANILA.

Manila, in lat. $14^{\circ}36'$ N., long. $120^{\circ}53'$ E., stands at the head of the bay, on the S.W. coast of the island of Luzon.

Population.—223,542.

Imports.—Cotton fabrics, silks, woollens, drugs, clocks, jewellery, machinery, rice, liquors, cement, coal, and petroleum.

Exports.—Sugar, hemp, cordage, tobacco, cigars, indigo, leather, teak-woods, sapan-wood, mother-of-pearl, tortoiseshell, etc.

Accommodation.—The largest vessels can anchor in the roadstead, about a mile off the town, in 4 to 5 fathoms, mud bottom. Small vessels not drawing more than 12 ft. can enter the river and load and discharge alongside the quay, which is 4,250 ft. long. There are four cranes on

East Indian Archipelago—Manila (*continued*).

Custom House Quay to lift 3 to 6 tons each. The climate is healthy. Ca should be taken during June, July, and August to avoid exposure to the sun. Distance from Liverpool by the Cape, 12,585 miles; by Suez Canal, 9,575 miles. All general repairs to vessels up to 2,500 tons can be done.

Time Signals.—Chronometers can be checked here. A black ball is hoisted 86 ft. above high water on the Observatory 5 minutes before the signal is given. The signal is made by the ball falling 25 ft. at noon mean time meridian of 120° E. Greenwich mean time 16 h. 0 m. 0 s; local mean time 0 h. 3 m. 52 s.

Port Charges.—For wharfage and harbour dues and other charges see **Philippine Islands**.

NUEVA CÁCERES.

Nueva Cáceres is in lat. 13°35' N., long. 123°7' E.

Population.—17,943.

Imports.—Rice and manufactured articles.

Exports.—Hemp and copra.

Accommodation.—There is a maximum depth of 10½ ft. of water at high tide, and a minimum depth of 4 ft. of water at low tide.

Pilotage.—Compulsory from San Miguel Bay and River Bicol Nueva Cáceres. Vessels over 50 tons net, 4 pesos (local currency) per English foot draught. For changing anchorage at the wharf, 1 peso per English foot draught; for all piloting and shifting at night, double rate are charged.

Port Charges.—**Mooring**:—1 peso per English foot draught. **Wharfage and Harbour Dues**:—See **Philippine Islands**. **Boat Hire**: Lighters of about 15 tons, 10 pesos. **Labour**:—60 c. per day, and double at night. **Entrance and Clearance** at Customs:—8 pesos. **Bill of Health**:—1 peso.

PORT ILOILO.

Iloilo is in lat. 10°53' N., long. 122°45' E. Climate healthy.

Imports.—Rice and general merchandise.

Export.—Sugar.

Accommodation.—Entering the port of Iloilo from the south the channel between Guimaras and the Oton Bank should be used, as the channel running on the west of the bank is very narrow, and not even known by all the local pilots. There is a lighthouse on the W. point of Guimaras Island. The island of Guimaras forms, in front of Iloilo, a sheltered passage, running nearly north and south, about 2½ miles broad with deep water and good holding ground. The best anchorage for vessels which have to load or discharge cargo will be found to the north of the mouth of the river, which has a red light on the southern bank. Care must be taken in anchoring to leave the mouth of the river free for the local traffic in and out. The entrance runs W.N.W. and E.S.E. Nor east of the light, on the opposite side of the channel of the river, there is a bank of sand and mud, with fishing stakes, which is dry at low water. The bank runs out some distance, but the water on it goes on increasing gradually to the middle of the Straits, where there is some 16 fathoms, and on towards the island of Guimaras up to 20 fathoms of water. The bottom is mud and sand, and forms very good anchorage. On the south of

East Indian Archipelago—Port Iloilo (continued)

mouth of the river the anchorage is not so secure, on account of the whirlpools formed by the current from the river coming in contact with the current down the Straits, which run up to 6 knots occasionally in the N.E. monsoon. During the winter six months the night tide is the highest, and during the summer six months the day tide. The tides are highest in November and December and May and June.

At the entrance of the river there is an average depth of 14 ft. but where the red light is placed, the channel is extremely narrow, being only some thirty fathoms broad, and at high tide it has a depth of about 20 ft. in the deepest part; as there is, however, nothing to show the entrance, it requires a pilot to enable any vessel to enter. The channel curves considerably and is very narrow in places, but continues from the entrance as far up as the Custom House godown, which comprises the chief sugar deposits in the port. This creek runs past the town of Molo, but becomes narrower and shallower, and finally finds its way into the channel on the north of the Oton Bank. Vessels load inside up to 17 ft. It is well to lay alongside the wharf with a bow to the south, on account of the strong current at the ebb. Vessels have to anchor bow and stern, with bow and stern cables to the wharf also. The quay is $\frac{1}{2}$ mile long and is equipped with a crane to lift 4 tons. There is a patent slip with a lifting power of 200 tons. A bill of health from the last port is necessary to avoid difficulties.

Pilotage.—Compulsory both to the anchorage and in the port. There is a pilot station on the Guimaras coast, near a village called Sta. Ana.

HARBOUR PILOTAGE FOR VESSELS ENGAGED IN THE FOREIGN TRADE, INWARD AND OUTWARD, FROM AND TO PILOT STATION SINAPAAPAR, OR DUMAN-GUS POINT, GUIMARAS.

Pesos c.				Pesos c.			
Vessels of	30 to	50 tons inclusive	10 00	Vessels of	1,500 to	2,000 tons exclusive	56 00
"	50 "	75 " exclusive	16 00	"	2,000 "	3,000 "	70 00
"	75 "	100 "	18 00	"	3,000 "	4,000 "	90 00
"	100 "	250 "	20 00	"	4,000 "	5,000 "	120 00
"	250 "	500 "	26 00	"	5,000 "	6,000 "	150 00
"	500 "	750 "	30 00	"	6,000 "	7,000 "	180 00
"	750 "	1,000 "	36 00	"	7,000 "	8,000 "	220 00
"	1,000 "	1,500 "	46 00				

RIVER PILOTAGE DUES, FOR ALL VESSELS, INWARD AND OUTWARD, FROM AND TO HARBOUR.

Pesos c.				Pesos c.			
Sailing vessels up to 56 tons.			2 00	Vessels of	500 to	750 tons exclusive	18 00
Sailing vessels of 56 tons to 75 tons, inclusive			3 00	"	750 "	1,000 "	20 00
Steamers of 30 to 75 tons, inclusive			5 00	"	1,000 "	1,500 "	24 00
Vessels of	76 to	100 tons inclusive	10 00	"	1,500 "	2,000 "	32 00
"	100 "	150 " exclusive	12 00	"	2,000 "	2,500 "	40 00
"	150 "	250 "	14 00	"	2,500 "	3,000 "	50 00
"	250 "	500 "	16 00	"	3,000 "	3,500 "	66 00
				"	3,500 "	4,000 "	86 00

Whenever a pilot is kept on board a vessel, through quarantine or other causes beyond his control, he is entitled to receive pay at the rate of 10 pesos, Philippine currency, per day of twenty-four hours. All time over 24 hours to be counted as one day. Pilotage service at night is charged double the above rates.

Port Charges.—Wharfage and Harbour Dues.—See **Philippine Islands.** Agency:—Entrance and clearance, 50 to 100 dols.; Custom House stamps and stamped papers, 10 dols. **Customs Overtime:**—Inspector,

East Indian Archipelago—Port Iloilo (*continued*).

1 dol. per hour; checker, 30 c. per hour. **Consular Fees**:—10 dols. 75 c. on British vessels only. **Night Watchman**:—Vessels having on board Chinese and Indian crew must employ Customs watchman, whether anchored in the river or bay. **Charges**:—1 dol. per hour for 4 hours; 30 c. per hour for 8 hours. **Labour**:—From 75 c. to 1 dol. per day (for shipping carpenters and caulkers, 75 c. to 1 dol. 50 c. **Stevedore**:—Discharging ballast, 2 dols. per ton; stowing sugar, 40 c. per ton; general cargo, 50 c. Sundays and holidays, 10 dols. per gang working on board. **Steam Launch**:—20 dols. during stay of vessel in port. **Water** is brought alongside in a water-boat, at 3 dols. per ton. **Provisions** are rather dear, but plentiful. Commission on disbursements, $2\frac{1}{2}$ per cent. steamers; 5 per cent. sailers; or as per charter party. Marine insurance on disbursements, steamers, $1\frac{1}{4}$ per cent. to the United Kingdom, $1\frac{1}{2}$ per cent. to the United States; sailers, $1\frac{3}{4}$ per cent. October to April to the United Kingdom or the United States; $2\frac{1}{4}$ per cent. April to October to the United Kingdom or the United States. Vessels arriving with general cargoes of coal incur slight extra charges.

Pro Forma Charges on a vessel of 5,000 tons net reg., ballast in and a cargo of sugar and general merchandise out:—

	Dols.	c.
Agency fee	75	00
Entry at Custom House	4	00
Bill of health	1	00
Clearance at Custom House	4	00
Pilotage inwards, during day	150	00
" outwards, at night	300	00
British Consul's fees	10	75
Hire of checkers	9	60
Customs overtime	32	00
Stevedore, loading 4,000 tons sugar at 40 c.	1,600	00
" " 4,000 tons general cargo at 50 c.	2,000	00
Postages and telegrams	10	00

4,196 35 = £431 14s. 1

SUAL.

Sual is in lat. $16^{\circ}1'$ N., long. $120^{\circ}5'$ E.

This port is now closed to foreign commerce.

SULU, OR JOLO.

Sulu, or Jolo, in lat. $6^{\circ}0'$ N., long. $121^{\circ}6'$ E., is situated on the N. side of the island of the same name.

Population.—1,270.

Imports.—Rice, hardware, cotton goods, petroleum, crockery, glassware, gambier, etc.

Exports.—Pearl shells, sharks' fins, bêche-de-mer, copra, hen's eggs, sponges, and tortoise-shells.

Accommodation.—The port of Jolo, one of the five treaty ports, is no longer a free port. There is a fine pier and wharf here, about 200 ft. long, with a depth alongside of 20 ft. at low tide, and about 25 ft. at high tide. There is a tramway from the wharf to the Custom House godown. The anchorage is in 8 to 11 fathoms. The largest ships can moor at the wharf to load or unload cargo and take fresh water which is supplied

East Indian Archipelago—Sulu, or Jolo (continued).

the town authorities. This port is the natural distributing port for the north, south, and east coast of Mindanao and the entire Jolo Archipelago. Vessels must present their manifests within 48 hours of anchoring. The only prohibited importations are arms, ammunition, opium, and articles of a like nature. The trade of the place is in the hands of Chinamen.

Port Charges.—Wharfage and Harbour Dues.—See **Philippine Islands.** **Entrance Fees** :—4 dols. **Clearance Fees** :—4 dols. **Labour** :—about 1 dol. per day. **Provisions** :—Bullocks may be obtained at 15 to 20 dols. each; chickens, 2 dols. per doz.; eggs, 2 dols. per 100. Potatoes, fish, etc., cheap and plentiful.

TACLOBAN.

Tacloban is in lat. $11^{\circ}20'$ N., long. $124^{\circ}55'$ E.

Population.—11,948.

Imports.—Rice, machinery, and general merchandise.

Exports.—Hemp and copra.

Accommodation.—There is a depth of 16 feet at high water.

Pilotage.—Optional.

Port Charges.—There are no fixed charges, the charges for **Moor- ing, Wharfage, Boat Hire, Labour**, etc., being by arrangement.

ZAMBOANGA.

Zamboanga is in lat. $7^{\circ}10'$ N., long. $121^{\circ}55'$ E.

Population.—3,281.

Imports.—Textiles, rice, coal, and machinery.

Exports.—Hemp, copra, lumber, almaciga, mother-of-pearl, and tortoise-shell.

Accommodation.—Zamboanga is an open harbour, and no pilots are required to find a safe anchorage. The channel is sufficiently deep with good holding ground, and although a strong current (five knots) prevails, vessels have no trouble in ordinary weather. There is a Government wharf, open for the use of all vessels in their proper turn, whether Government or private, extending to a depth of 20 ft. Discharging from large vessels is generally done, however, into lighters.

Pilotage.—None. Where a pilot is taken from the port of Zamboanga or another port in the Zamboanga district, and returned to Zamboanga, a charge of 6 pesos, Philippine currency, per day is made for all vessels under 500 tons; vessels over 500 tons, 10 pesos, Philippine currency, per day. If a pilot is detained on board through quarantine or any other cause, a charge of 5 pesos, Philippine currency, per day or part of a day is made.

Port Charges.—Wharfage and Harbour Dues.—See **Philippine Islands.** **Entrance** :—Foreign vessels, 4 dols. **Clearance** :—Foreign vessels, 4 dols. **Bill of Health** :—1 dol. **Passenger Manifest** :—1 dol. **Labour** :—Discharging into lighters, 1 dol. per day. The Collector of Customs acts as Consular Officer at this port.

INDIA.

The Empire of India comprises the central and by far the most important of the three great peninsulas of Southern Asia, together with large territories on the eastern side of the Bay of Bengal. The total area of these vast dominions is 1,766,642 square miles, while the population, calculated on the basis of the census taken in 1901, amounts to nearly 300,000,000.

Commerce.—The annual value of the oversea trade of British India is about 231 millions sterling, made up of imports valued at £102,151,451 and exports £128,843,278, the details for the fiscal year 1907 having been as under :—

	Imports.	Exports.
Living animals, food, drink, and narcotics	£11,638,543	£36,649,733
Raw materials	6,939,487	58,553,217
Manufactured articles	62,991,732	30,262,174
Coin and bullion	20,581,689	3,378,154
Total	£102,151,451	£128,843,278

India is essentially an agricultural country, the vast population being engaged mainly in cultivating the soil. Millet, rice, and chick peas are the staple food crops of India. Oil seeds of several kinds are also raised, and wheat forms an important crop, especially in the Punjab and the United Provinces. Other leading crops are cotton, tea, jute, sugar cane, indigo, and tobacco. Coffee is extensively cultivated, and the cinchona tree is grown successfully on the mountain slopes, and quinine forms an item in the export list. Pepper, lac, and silk are also produced. The opium poppy is grown in the Ganges Valley and in Central India. Cattle are also raised extensively in the drier regions of the north-western part. Many valuable products are obtained from the forests, teak from Burma, oak from the Punjab, and the deodar cedar and other conifers on the Himalaya slopes. The cocoanut palm and the bamboo supply a great variety of useful material for the native peoples. The country also possesses valuable mineral resources, coal, iron ore, gold, and copper all being found in large quantities. The principal imports are cotton manufactures, metals, hardware, cutlery, sugar, machinery, and mill work, railway plant and rolling stock, woollen goods, provisions, and chemicals.

Of the shipping engaged in this immense trade, more than two-thirds of the total tonnage enter from and clear for British ports, the latest return available showing as follows :—

	Entrances.	Tonnage of Sailing and Steam Vessels.
United Kingdom		1,528,491
*British Possessions		3,237,481
Austria-Hungary		183,314
France		44,896
Germany		225,678
Italy		109,239
†America		107,906
Other countries		1,482,978
		6,919,983

* Including British East Africa, Somaliland, and the Maldivo Islands.

† Including United States and Central and South America; also West Indies other than British.

India.

	Clearances.	Towage of Sailing and Steam Vessels.
United Kingdom		1,593,370
*British Possessions		2,413,435
Austria-Hungary		144,934
France		300,415
Germany		316,125
Italy		77,152
†America		280,098
Other Countries		1,729,924
Total		6,855,453

* Including British East Africa, Somaliland, and the Maldivé Islands.

† Including United States and Central and South America; also West Indies other than British.

The following table shows the distribution of the principal imports and exports, excluding Government stores, during 1907 :—

	Bengal.	Eastern Bengal and Assam.	Burma.	Madras.	Bombay.	Sind.
	£	£	£	£	£	£
Imports.	33,701,428	257,705	6,372,007	6,583,023	36,762,793	6,662,086
Exports.	53,033,309	2,601,503	10,160,886	11,706,022	33,429,026	10,588,867

The actual extent of the foreign trade at the six largest ports is shown below :—

	£
Calcutta	80,323,798
Bombay	55,592,240
Rangoon	14,161,647
Madras	9,546,834
Karachi	16,813,912
Tuticorin	1,754,128

Mercantile Marine.—The merchant navy of British India, including Ceylon, consists of 87,310 tons steam and 22,583 tons sail.

Internal Communications.—The roads maintained by the public authorities throughout the country have a total approximate length of 190,000 miles. These well-kept and greatly-improved roads are freely used for the transport of merchandise, as are the great waterways of the Ganges, Brahmaputra, and Irrawaddy, and, to a less extent, the lower Indus, which at certain seasons of the year are crowded with small craft plying between the coast and the interior. The Ganges is navigable for the largest vessels to Chandernagore, while light steamers can go up to Cawnpore and thence by canal to Hardwar, more than 1,300 miles above its mouth. In the Valley of the Ganges, Orissa, and in southern India especially, canals are an important means of communication. The most important change in trade, however, has been wrought by the development of railways, introduced in 1854. These have a length of over 30,000 miles, the vast proportion being lines owned and worked by the State or by companies under Government guarantee. There is an excellent post and telegraph service.

Currency, Weights and Measures.—There is one uniform monetary standard for the whole of British India. It is as follows :—

12 pies = 1 anna = 1d.
16 annas = 1 rupee = 1s. 4d.

Under the provisions of the Indian Paper Currency Act, 1905, a currency note for 5 Rs. issued from any town in British India, except Burma, was

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made legal tender throughout British India, except Burma. Similarly, 5-Rs. notes issued for any town in Burma were declared legal tender throughout that province. At the end of the year 1907, the value of the notes in circulation was 46,95,19,260 Rs., nearly two-thirds of which has been issued in the currency circles of Calcutta and Bombay.

The Indian "Weights and Measures of Capacity Act of 1871" was intended as a step towards the ultimate adoption of a uniform system of weights and measures throughout British India, and it provided that tables of equivalents of weights and measures of capacity other than those authorized by the Act might be prepared and published by the local Governments. As regards these tables, so far as is known, none have been prepared. The weights and measures under this Act were directed to be used in dealings and contracts by Government offices, municipal bodies, and railway companies as soon as proper standard weights and measures were available for the verification. The unit and standard of weight established by this Act is the ser = 1 kilogramme = 2.20 British Imperial lb. In view of the fact that this Act has not been generally adopted, and that the old native weights and measures still remain in use, and differ in each province of the empire, we have given these under the various presidencies of Bengal, Bombay, and Madras.

Emigration.—The emigration of natives from India is conducted under the provisions of the Indian Emigration Act of 1883, as modified by X of 1902, and in accordance with the rules and modifications which have at various times been issued by the Government of India. From these it appears it is not lawful to receive any emigrants on board a vessel unless a licence to carry emigrants has been obtained from the local Government. Whenever a master or owner of any vessel desires to obtain such licence, he must apply through the Protector of Emigrants to the local Government for the same, and such application must state—

(a) The number of emigrants which he believes his vessel to be capable of carrying.

(b) The ship's classification.

(c) The ship's tonnage.

(d) Whether the ship is fitted with any apparatus for securing artificial ventilation, and of what description.

(e) Whether the ship's receptacles for drinking water are separately constructed tanks or mere compartments of the hull; and what was last stored in them.

(f) The cargo last carried.

(g) Whether cholera, small-pox, measles, scarlet fever, yellow fever or other dangerous communicable disease has occurred on board during either of the ship's last two voyages.

The Protector of Emigrants will then cause the vessel to be surveyed by a competent person at the cost of the master or owner with a view to ascertain her seaworthiness, and the extent and nature of her accommodation for emigrants, and to ascertain that she is properly ventilated, and is supplied with all the tackle, apparel, and furniture requisite for her intended voyage. Provided that if the vessel is a steamship having certificate of survey granted by the Board of Trade, or any British Colonies

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Government, or under the Indian Steamships Act, 1884, and in force and applicable to her intended voyage, the survey to ascertain her seaworthiness will not extend to her hull or machinery unless the Protector of Emigrants has reason to believe that, since the grant of the certificate, her hull or machinery has sustained injury or damage, or has otherwise become inefficient.

If the local Government is of opinion that the vessel is in all respects suitable for the carrying of emigrants, and is properly manned and officered, it will give to the master a licence to carry emigrants, therein specifying the number of emigrants which may be received on board. A licence will not, however, be granted unless—

(a) There is provided for the emigrants eight between decks or, subject to the approval of the Protector of Emigrants and the Medical Inspector, in cabins on the upper deck, a space devoted to the exclusive use of the emigrants, having in every part a height of not less than six feet.

(b) A separate place is fitted up for a hospital.

(c) Arrangements for the separation of women (married or single) and children from the other emigrants.

If cabins on the upper deck are allowed, they must be firmly secured and entirely covered in. The space set apart for the use of emigrants must contain at least 12 superficial ft., and 62 cubic ft. for each emigrant, provided that two emigrants under the age of ten years will count as one only. Every emigrant vessel at the time of departure from the port at which emigrants are embarked must be provided with clothing, fuel, and water over and above the supply for the master, officers, and crew, and of the cabin and other passengers (if any), in such quantity and of such description and quality as the Governor-General may from time to time prescribe, and as are set forth in the accompanying schedules.

Every emigrant vessel must carry with her a properly qualified surgeon and also such compounders, interpreters, and nurses, and medicines and stores in such quantity and quality as the authorities may from time to time order.

Every master licensed under the Act must, on the requisition of the Protector of Emigrants, and before any emigrant embarks on board his vessel, execute to the Protector, in duplicate, a bond binding himself and the owner of the vessel in a penal sum of 10,000 rupees, to perform the duties imposed by the Act, or any rule made under the Act on a master and owner respectively.

COUNTRIES TO WHICH EMIGRATION IS LAWFUL.

The British colonies of Mauritius, Jamaica, British Guiana, Trinidad, St. Lucia, Grenada, St. Vincent, Natal, St. Kitts, Nevis, Fiji, and the Seychelles Islands.

The Netherlands colony of Dutch Guiana.

The Danish colony of St. Croix.

Before embarkation every emigrant is supplied with a pass, and this he must hand over to the master, or to a properly authorized officer on his behalf, and no emigrant unprovided with the official pass may, under a penalty, be allowed on board.

Food and Water.—

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SCALE OF PROVISIONS AND MISCELLANEOUS ARTICLES FOR EMIGRANT VESSELS.

N.B.—In provisioning emigrant vessels, water, salt, tobacco, and medical comforts shall be shipped for the whole voyage, dry provisions for issue, when cooking is impossible, for one-twentieth part of the voyage, and ordinary provisions for the rest of the voyage. Two emigrants under ten years of age shall count as one emigrant only. ORDINARY PROVISIONS, APPLICABLE TO EMIGRANT VESSELS SAILING FROM PORTS OTHER THAN MADRAS.

Showing the Daily Rations and the resulting Weekly Quantities per Emigrant.

POSSIBLE METHOD OF DISTRIBUTING WEEKLY QUANTITIES.																	
ARTICLES.	Daily Rations.		Weekly quantities at the rate of five-sevenths rice and two-sevenths flour.						TUESDAY, THURSDAY, SATURDAY.				SUNDAY.		Total of week's issue.	How to be packed.	REMARKS.
	oz.	dr.	oz.	dr.	MONDAY, WEDNESDAY, FRIDAY.		TUESDAY, THURSDAY, SATURDAY.		SUNDAY.		oz.	dr.					
					Breakfast.	Dinner.	Breakfast.	Dinner.	Breakfast.	Dinner.							
Rice	22*	..	110	..	11	..	11	11	Biscuit, 10 oz. † Clover, 8 oz. (occasionally)	11	110	..	In bags.	* If rice or flour be exclusively used.			
Flour	18*	..	36	..	..	12	..	..	Sugar, 1½ oz.	..	36	..	{ † In tanks and ‡ In barrels.	† See scale of dry provisions.
Dal for Rice-eaters	5	..	25	..	4½	..	3	..	..	4½	33	..	Bags	{ Urban dal, †; Musoor dal, ‡; Gram dal, ‡; Moong dal, ‡.	
Ghee for Rice-eaters	4	..	3	..	1½	..	1	..	..	1½	8	..	Tins	{ Mustard oil, two-thirds. Coconut oil, one-third.	
Flour	1	8	5	8	1	..	1	..	..	1	3	8	Tins		
Mustard and coconut-oil	..	8	3	8	2	..	2	..	..	2	14	..	..		
Mutton (a) or fish (b)	2	..	14	..	6	..	6	..	..	6	42	..	Baskets.		
Potatoes (c)	2	6	42	..	..	..	..	..	..	..	..	..	..
Onions	2	..	..	..	..	..	..	..	..	..	..	..	..
Pumpkins or Yams (d)	2	..	..	..	..	..	..	..	..	..	..	..	..
Garlic	2	..	..	..	..	..	..	..	..	..	..	..	..
Chillies	2	..	..	..	..	..	..	..	..	..	..	..	..
Black pepper	..	..	..	..	..	..	..	..	..	..	..	..	..
Mustard-seed	..	..	..	..	..	..	..	..	..	..	..	..	..
Coriander-seed	..	..	..	..	..	..	..	..	..	..	..	..	..
Cumin	..	..	..	..	..	..	..	..	..	..	..	..	..
Fennel-seed	..	..	..	..	..	..	..	..	..	..	..	..	..
Turneric	..	..	..	..	..	..	..	..	..	..	..	..	..
Green ginger	..	..	..	..	..	..	..	..	..	..	..	..	..
Tamarind	..	..	..	..	..	..	..	..	..	..	..	..	..
Salt	1	..	..	..	1	..	..	..	..	1	7	..	..		
Tobacco, prepared	..	..	..	..	..	..	..	..	..	..	..	..	..
" leaf	..	..	..	..	..	..	..	..	..	..	..	..	..
Water (e)	1 gallon	..	7 gallons	..	1	..	1	..	..	1	7 gallons	..	Tanks	The supply of curry stuff and condiments being sufficiently liberal, the scale should not be exceeded, but the articles may be varied within the limit of the scale at the Surgeon's discretion.	
														From municipal hydrants.			

(a) In the case of emigrants proceeding to places west of the Cape, or to Fiji via South Australia, fresh mutton (sheep) at scale rate shall be supplied for one week, dried fish for two weeks, and preserved mutton for the rest of the voyage. As one sheep weighing 60 lb. yields about 25 lb. of available flesh, four sheep are approximately equivalent to one week's supply of fresh mutton at scale rate for 100 emigrants, and shall be so reckoned in calculating the quantity of mutton to be supplied.

(b) In the case of emigrants proceeding to places east of the Cape, and to Fiji via Torres Straits, fresh mutton (sheep) at scale rate shall be supplied for one week, and dried fish for the rest of the voyage.

(c) In the case of emigrants proceeding to places west of the Cape, or to Fiji via South Australia, in lieu of fresh potatoes, 16 days' supply of preserved potatoes (at scale rates and according to rule of substitution) shall be shipped at Calcutta. In substituting dried preserved potatoes for fresh potatoes, one-part by weight of preserved potatoes shall be reckoned as equal to four parts by weight of fresh potatoes.

(d) In the case of vessels proceeding to colonies west of the Cape, five-sevenths of the allowance of mutton (sheep) and vegetables shall be taken in at Calcutta, and two-sevenths, the balance, at the Cape or other port of call.

N.B.—Excepting apples or wine, no foreign articles of luxury or amusement are to be supplied.

DRY PROVISIONS.

Showing the Allowance for a Day and for a Voyage of 20 Weeks per Emigrant.

ARTICLES.	Allowance for one day or for two meals.	ALLOWANCE FOR A VOYAGE OF 20 WEEKS.									How to be packed.	REMARKS.
		For one-twentieth part of the voyage, or seven days' supply.			For every Sunday morning, or 20 days' supply.			Total supply.				
		lb.	oz.	dr.	lb.	oz.	dr.	lb.	oz.	dr.		
Biscuits .	10 ounces	4	6	..	12	8	..	16	14	..	In tanks.	May be eaten with raw onion if preferred.
Sugar .	1½ "	..	10	8	1	14	..	2	8	8	In bags.	May be eaten with biscuit or choorah.
Choorah .	8 "	3	8	..	5	..	..	8	8	..	"	May be eaten with sugar & milk.
Gram .	4 "	1	12	..	..	..	..	1	12	..	"	May be eaten with salt and some condiment, such as pepper or chillies.

N.B.—The dry provisions shall be shipped for one-twentieth part of the voyage, and shall be issued only when the weather renders cooking impossible. The extra biscuits, choorah, and sugar shall be shipped only for the morning meals on each Sunday of the voyage.

The emigrants' galley must be provided in a deck-house and in a compartment separate from that of the ship's or crew's galley. It shall be fitted with a steam cooking apparatus approved by the Marine Surveyor and also with an ordinary cooking range, capable of baking *chuppatis* for the total number of emigrants to be carried, as well as of accommodating in the event of any accident to the steam cooking apparatus, the full number of large size regulation boilers to be put on board. A suitable lever with chains and hooks for lifting the boilers off the fire shall also be provided.

Each adult emigrant is to be provided with a tin mug to hold a quart of water, and a tin plate measuring 12 in. in diameter; and each child above two years of age with a tin mug to hold a pint of water, and a tin plate measuring 9 in. in diameter.

In every emigrant vessel there shall be independently constructed main tanks for the storage of the drinking water for the emigrants and ship's crew. The aggregate capacity of the tanks shall be sufficient for their build sufficiently strong to meet requirements. With the approval of the Marine Surveyor, such water may, in addition, be carried in the after-peak compartments, main ballast tanks and double-bottom compartments, other than those under the engines and boilers of steamship.

The maximum capacity allowed for any one main tank or after-peak compartment shall not exceed three thousand gallons, and that for a one main ballast tank or double-bottom compartment shall not exceed two-fifths of the total drinking water required to be placed on board the port of embarkation.

Every main tank, after-peak compartment, main ballast tank, and a double-bottom compartment shall be—

(a) So arranged that it can be properly examined by the Marine Surveyor.

(b) Certified to be water-tight.

(c) Fitted with a sounding pipe.

(d) Provided not only with a separate communication either by cock valve, or pipe so as to connect with the fresh-water pump, but also with

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separate air-pipe to admit of pumping out without the cover being opened, the air-pipe being turned down at the top or otherwise so made as to prevent dirt or sea-water getting through it to such tank or compartment.

No cock, valve, or other connection having communication with the sea, holds, or decks, other than those above specified as necessary for sounding, emptying or airing such tanks or compartments, shall be fitted inside such tanks or compartments, and the pump used for pumping the drinking water out of them shall not be used for any other purpose.

Clothing.—Clothing for the use of emigrants is to be provided in accordance with the following table:—

ARTICLES.	TO PLACES WEST OF THE CAPE OR TO FIJI VIA SOUTH AUSTRALIA.		TO PLACES EAST OF THE CAPE.				REMARKS.
			NATAL.		MAURITIUS OR FIJI VIA TORRES STRAITS.		
	For whom intended.		For whom intended.		For whom intended.		
	Men.	Boys.	Men.	Boys.	Men.	Boys.	
<i>(Ordinary clothing.)</i>							
Shirts	3	3	3	3	2	2	* Besides a warm jacket for every man and boy going to Fiji via South Australia.
Jackets	1	1	1	1	1	1	
Trousers	1	1	..	..	..	..
Shirts	1	1	1	1	1	1	
Blankets	2	1	2	1	1	1	
<i>(Warm clothing.)</i>							
Trousers	1	1	..	..	..	..	† Also one yard of cotton cloth to females above 13 years of age.
Woolen or banian	1*	1*	1	1	1	1	
Cap	1	1	1	1	1	..	
<i>(Ordinary clothing.)</i>							
Shirts	Women. 4	Girls. 4	Women. 3	Girls. 3	Women. 2	Girls. 2	‡ Besides a warm jacket or kurta for every woman and girl going to Fiji via South Australia.
Blankets	2	1	2	1	1	1	
<i>(Warm clothing.)</i>							
Shirts	1	1	..	..	..	..
Woolen or banian	1‡	1‡	1	1	1	1	
<i>(Ordinary clothing.)</i>							
Shirts or sarie . . . . .	..	Infants. 1	..	Infants. 1	..	Infants. 1	
Jacket or kurta . . . . .	..	1	..	..	..	..
<i>(Warm clothing.)</i>							
Kurta or banian . . . . .	..	1	..	1	..	1	
Cap . . . . .	..	1	..	1	..	..

Of Extra Clothing.

(a) To make good losses and wear and tear five extra articles of each kind shall be supplied for every 100 emigrants.

(b) Eighteen flannel bandages, for the use of invalids, for each ship.

(c) Between March 1 and September 15 at least one thick extra blanket shall be provided for each emigrant above 2 years of age proceeding to places west of the Cape, or to Fiji via South Australia.

Of Size and Description of Clothing.

ARTICLES.	For whom intended.	Size.	REMARKS.	
Blankets	Men and women	6½ x 5 feet	{ To be thick and of close texture to ensure warmth.	
	Children	5 x 4 „		
Saries	Women	6 yards in length, and extending from hip to ankle in width.	{ To be made of stout grey shirting.	
	Girls	3 ditto ditto ditto		
Dhoties	Men	4 ditto ditto ditto	{	
	Boys	3 ditto ditto ditto		
Guernseys or kurtas.	Men	{ Extending below the hip	{ To be of woollen material, or guernsey with long sleeves.	
	Women			
	Boys	{ Extending below the knees		
	Girls			
Infants		One to be of woollen material, and the other of grey shirting.		

N.B.—All the above articles should be equal in every respect to the samples approved and retained in the office of the Protector of Emigrants, and a bag should be supplied to each adult emigrant of suitable size for holding his or her, and, if necessary, children's kit.

Hospital Accommodation.—The hospital shall, in every case, be on the upper deck, and shall be fitted in a deck-house, except in vessels proceeding to Fiji by the South Australian route, in which, if practicable, the forward poop cabins shall be fitted for hospital purposes. In the absence of a suitable deck-house, the hospital-house shall be built as strong, secure, and water-tight as a deck-house should be. The doors of the hospital-house shall, when practicable, be fitted aft, and in every case in which they are situated in the forward end corresponding doors shall, when practicable, be fitted in the after end also, and accommodation shall be provided therein for 2 per cent. of the total number of emigrants to be carried in the vessel at the rate of 18 superficial feet per emigrant.

The hospital space shall be divided by means of a *substantial wooden* bulkhead, which shall be so constructed as not to interfere with ventilation, into two compartments for the separate accommodation of male and female patients, *each compartment being fitted independently with doors as stated above*, and shall be ventilated, lighted, and fitted to the satisfaction of the Medical Inspector.

The bunks shall be constructed to fold out of the way when not needed and shall be fitted with either bottom boards, or strong sacking bottoms, tightly stretched and securely fastened. In either case the bottoms shall be removable and capable of being thoroughly cleaned, aired, and renewed, if necessary, during the voyage.

A separate compartment approved by the Protector of Emigrants and the Medical Inspector of Emigrants, and sufficient for at least two persons, shall be provided for the accommodation of emigrants who may become insane or violent and obstreperous during the voyage.

A well lighted and suitably fitted dispensary shall be provided either in a deck-house, or in one of the forward poop cabins, subject to the approval of the Medical Inspector. The dispensary shall be a compartment separate from the hospital or compounder's cabin, and shall be capable of holding a fitted medicine chest, a folding table, a small dispensary stove for the warming of food, etc., for patients during the night, and racks for drugs and appliances in immediate use. It shall be provided with a lock and key.

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SCALE OF MEDICAL COMFORTS.

Showing the Quantities to be shipped for 100 Emigrants.

ARTICLES.	(a) In ships bound to places west of the Cape and to Fiji via South Australia, cal- culated for a voyage of 20 weeks.	(b) In ships bound to places east of the Cape and to Fiji via Torres Straits, cal- culated for a voyage of 12 weeks.	How to be packed.	REMARKS.
Chicken broth . . .	lb. 50	lb. 50	In 1 lb. and ½ lb. tins.	Should the Surgeon Superintendent desire it, Brand's Essence of Beef or Bovril shall be substituted for the whole or a portion of these peptonoids. One-half of the preserved milk shall be of either the "Anglo-Swiss" or the "Nestlé's Condensed Swiss" brand, at the option of Surgeon-Superintendent. The other half shall be unsweetened milk, and be of either the "Dhalls," "1st Swiss" or the "Cow's Head" brand, at the option of the Surgeon-Superin- tendent. Where unsweetened milk, which is not condensed, is shipped, the quantity carried shall be five times the prescribed quantity. The contents of a pound tin mixed with ½ a gallon of warm water makes good milk. The article is intended to be used at the Sur- geon's discretion for infants, nursing mothers, invalids, and others to whom the issue may be considered expedient. For 100 infants. The quantity should be reduced proportion- ately if the number of infants to be carried is less than 100. Allenbury's Milk Food (Nos. 1 and 2) is preferable.
Peptonoids, Peptonoids, or others approved.	50	None	In 4 oz. tins.	
Brand's Essence of Beef, or Bovril.	1	½	Ditto.	
Beef, preserved . . .	480	240		
Food for infants (Nes- tlé's, Allenbury's, or Mellin's, also Plas- mon.)	25 +	12 +	In bottles or tins.	
So . . .	80	40	[In tins.	
Yamroot . . .	80	40	Do.	
Ice . . .	50	25	Do.	
Cur (fine) . . .	30	None.	In barrels.	
Car . . .	600	300	In bags.	
al fruit (candied) .	5	None.	In tins.	
le-juice . . .	30	15	Do.	
le-juice . . .	40 gall.	15 gall.	In bottles	
Wine . . .	8 "	3 "	Do.	If not the whole, at least two-thirds shall be non-alcoholic. At Surgeon's request, port or any other approved wine may be sub- stituted in such quantity as may be equivalent to the money value of not more than one-third of the total quantity of brandy to be shipped according to scale. The port wine should be of good quality.

The total quantity of each article shall be shipped according to above scale in either column (a) or column (b), as the case may be, in proportion to the length of voyage in either case and to the total number of emigrants to be conveyed.

Prohibited Cargo.—The provisions of the Act strictly prohibit any of the following articles being carried as cargo in emigrant vessels:—
Arsenic, bones, camphor, coal, collodion, corrosive sublimate, cotton, chlorate of potash, dammer, ether, hides (raw), jute (excepting gunny-bags

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screwed in bales), matches, naphtha, nitre (nitrate of soda), essential oil fixed oils, (unless stowed in a separate water-tight compartment, provide that 10 tons of mustard, castor, gingelly, or cocoanut oil, or, if ghee also shipped, aggregating that quantity, may be carried otherwise than in such water-tight compartment if securely packed and satisfactorily stowed orpiment, phosphorus, pitch, quicklime, rags, sulphur, spirits, saltpetre (nitrate of potash, unless stowed in a separate compartment so as to prevent it coming in contact with any inflammable substance), turpentine and spirit of turpentine, tar, pigs, male goats, dogs or ferocious or dangerous animal explosives, as defined in the Act of Governor-General in Council, No. IV of 1884, petroleum, as defined in the Act of Governor-General in Council, No. VIII of 1881, and all other articles prohibited in the case of troop ships.

BENGAL.**GRAIN MEASURES.**

5 chhatunks	= 1 kunki	= 0.5143 pint.
1 kunki	= 1½ pao	
16 chhatunks or 6 pao	= 1 ser or seer	= 1.6457 "
4 kunki	= 1 rek	= 2.0571 "
4 rek or 5 ser	= 1 payali or dron	= 8.2286 "
8 payali	= 1 man, mun, maund	= 8.2286 gallons.
20 payali	= 1 soali	= 20.5714 "

LONG MEASURE.

		English
		Yds. ft. in.
3 jan	= 1 ungal or augli	= 0 0 0½
4 ungal	= 1 muthi	= 0 0 3
3 muthi	= 1 bilisht	= 0 0 9
2 bilisht	= 1 hath	= 0 1 6
4 hath	= 1 bam	= 2 0 0
1,000 bam	= 1 kos	= 2,000 0 0

TONNAGE SCHEDULE AND MEASUREMENT RULES.

Articles.	Cwt. per ton net.	Cubic ft. per ton.	Articles.	Cwt. per ton net.
Aloes, in bags and boxes	20	—	Cigars	—
Alum, "	20	—	Cloves, in bags	8
Aniseed, in bags	8	—	" in boxes	—
Arrowroot, in cases	—	50	Coals	20
Arsenic, in bags or cases	20	—	Cochineal	—
Assafetida, in bags and boxes	20	—	Coffee, in bags	18
Apparel, in boxes	—	50	" in casks	16
Bark, in bags	8	—	Coral, rough	20
Beeswax	20 gross.	—	Coir, loose and unscrewed	12
Barilla	20	—	Coir, in dholls	10
Betel nut	20	—	Copras, or cocoanut kernel	14
Books	—	50	Coriander seed	12
Borax	20	—	Cotton, in bales, actual measure-	—
Bran	14	—	ment at	—
Brimstone.	20	—	Cowries	20
Bullion	at per cent.	—	Cummin seed	8
Cake lac, in bags	16	—	" black	8
Camphor, in cases	—	50	Cutch in bags	18
Cardamoms, in robins	8	—	" in cases not exceeding 20 cwt. gross	—
" in boxes.	—	50	Dates, wet.	20
Cassia, in boxes	—	50	" dry.	16
" bags	12	—	Dholl	20
Castor seed	15	—	Elephants' teeth, in bulk	20
Chillies (dry), in bags	8	—	Furniture	—
China root, in bags	11	—	Garlic and onions	12
" in boxes	—	50	Ginger	16
Chiretta, in bales	16	50	Gram	20
Churrah	14	—	Gums, in cases	—

India—Bengal (*continued*).**TONNAGE SCHEDULE AND MEASUREMENT RULES—continued.**

Articles.	Cwt. per ton net.	Cubic ft. per ton.	Articles.	Cwt. per ton net.	Cubic ft. per ton.
gunny bags and gunny cloth, not exceeding 2,240 lb. gross	—	50	Raw silk, in bales	10	—
anjah	—	50	Rattans, for dunnage	20	—
emp, 5 bales, not exceeding	—	52	Red wood, for ditto	20	—
ides, buffalo or cow, cured	14 gross.	—	Rhea, 5 bales, not exceeding	—	52
pois, horn shavings, and tips	20	—	Rice	20	—
prns, cow, buffalo, or deer	20	—	Rope, in coils	—	50
dia-rubber, in bags	16	—	„ lines and twines, in bundles	16	—
„ in cases	—	50	Rum, in casks	2 punchns. or 4 hhds.	—
digio	—	50	Safflower, 5 bales, not exceeding	—	52
on	20	—	Sago, in cases	—	50
ite, 5 bales, not exceeding	—	52	Sal ammoniac, in bags	20	—
„ cuttings, 5 bales not exceed.	—	—	„ in boxes	20 gross.	—
ing	—	52	Saltpetre	20	—
ic dye	—	50	Salt	20	—
rd	20 gross.	—	Sapan wood, for dunnage	20	—
mseed	20	—	Sealing wax, in cases	—	50
ace	—	50	Seed lac, in cases	—	50
achinery	20	—	„ in bags	16	—
etals	20	—	Senna	—	50
athic seed	18	—	Shells, rough, in bags	20	—
yrabolams	16	—	Shellac, in cases	—	50
blasses	2 punchns. or 4 hhds.	—	„ in bags	16	—
other-of-pearl, in bags	20	—	Silk chussum	—	50
„ in cases	20	—	„ waste	—	50
wrah flowers	20	—	„ piece-goods	—	50
„ seed	20	—	Skins	14 gross.	—
njeet	—	50	Soap, country, in cases	—	50
astard or rape seed	20	—	„ in bags	15	—
ger seed	20	—	„ bar	20	—
atmegs, in cases or casks	—	50	Stick lac, in cases	—	50
ix vomica	16	—	„ bags	16	—
its	16	—	Sugar	20	—
ll, in cases	—	50	Tallow, in cases or casks	20 gross.	—
„ in casks	4 hhds.	—	Tale	20	—
lseed cake	20	—	Tamarinds, in cases or casks	20 gross.	—
ium	per chest.	—	Tapioca	—	50
ddy	16	—	Tea	—	50
ilmatine, in bags	16	—	Teal seed	20	—
as	20	—	Timber, round	—	40
pper, long	12	—	„ squared	—	50
„ black	14	—	Tincal	20	—
anks and deals	—	50	Tobacco, in bales, 5 bales not exceeding	52	—
ppy seed	20	—	Tortoise shells, in chests	—	50
atchuck	10	—	Turneric	16	—
ags	—	50	Wheat	20	—
			Wool	—	50

BALASORE.

Balasore, is in lat. 21°30' N., long. 87°5' E.

Population.—20,265.

Accommodation.—Good anchorage will be found in 3½ to 4 fathoms, about 2 miles seaward of the Balasore Road buoy, which is black, surmounted by a basket. There is 2 ft. on the bar at low water, and small vessels, drawing 9 ft., can cross at high water spring tides, by passing between the nun buoys, but it should not be attempted without a pilot. Springs rise about 12 or 13 ft. There is steam communication with Calcutta weekly by a small tug.

India—Balasore (*continued*).**Pilotage.**—In and out :—

Vessels of	7 ft. draught	R	Vessels of	15 ft. draught	Rs.
..	8	20	..	16	80
..	9	30	..	17	90
..	10	40	..	18	100
..	11	50	..	19	110
..	12	55	..	20	120
..	13	60	..	21	130
..	14	65	..	22	140
		70			150

For every foot above 22 ft. an additional sum of 32 Rs. will be charged.

Half rates for steamers under steam; two-thirds for vessels taking the aid of steam.

Port Charges.—4 annas per ton for every 30 days. **Light Dues :—** Minicoy and Great and Little Basses, $\frac{1}{2}d.$ per ton, less 25 per cent. **Stevedore :—**Loading or discharging, 7s. per ton.

CALCUTTA.

Calcutta, in lat. $22^{\circ}32'$ N., long. $88^{\circ}28'$ E., is situated on the left or E bank of the Hooghly, one of the arms of the Ganges, about 122 miles from the sea. Distance by sea from Liverpool, via Cape, 11,375 miles, or via Suez Canal, 7,865 miles.

Population.—1,027,000.

Imports.—Coal, iron, textiles, cotton yarns, salt, hardware machinery, spirits, petroleum, tobacco, provisions, etc.

Exports.—Tea, shellac, rice, wheat, linseed, hides, raw jute, jute manufactures, indigo, castor oil, etc.

Accommodation.—The river adjacent to the city varies in breadth from rather more than $\frac{1}{4}$ to about $\frac{3}{4}$ of a mile, while a draught of 25 ft. can usually be relied on, and vessels drawing 28 ft. of water can pass up and down in safety. There are various bars to be negotiated between the mouth of the river and the port of Calcutta, the most troublesome being above Diamond Harbour which is 44 miles below Calcutta. The Kidderpurd docks consist of a basin entered from the River Hooghly by two entrances: one a lock pointing up stream, and the other a single entrance by which the basin is entered direct from the river. The basin entrance may thus be used as a large lock, and from it entrance is given on the E. side to two dry docks and at the south end by a double passage to Wet Dock No. 1, which dock is connected by a single passage with Wet Dock No. 2. The lock is 510 ft. long, 60 ft. wide, the single entrance having a width of 80 ft.; depth of water over sill, 34 ft. at high and 23 ft. at low water; mean rise of tide, 11 ft. The basin is 600 ft. long, 680 ft. wide, and has an area of $9\frac{1}{2}$ acres. There are 600 ft. of quayage on the W. side to accommodate one vessel; widths of passages to Wet Dock No. 1, 60 and 80 ft. Length of Wet Dock No. 1, 2,600 ft.; depth, 28 ft.; water area, 33 acres, and 5,400 ft. of quayage. There are twelve cargo sheds with an area of 506,625 square ft.; and one double-storey cargo shed, 520 ft. by 120 ft. There are also nine hydraulic cranes to lift 5 tons each; fifty-four to lift 34 cwt. each, and sheers to lift 100 tons. Wet Dock No. 2 is in process of construction, but at present provides a quayage on the N. side of 2,580 ft. for vessels loading coal. One of the coaling berths is fitted with mechanical appliances for loading. Four new produce berths are being constructed in Dock No. 2, with 2,000 lineal ft. of quayage and four transverse sheds, each having a covered floor area of 96,000 square feet; and 60,000 square feet of uncovered storage space. There are also several dry docks including the Calcutta, Lower Howrah, Caledonia, Commercial, Upper

India—Calcutta (*continued*).

Howrah, Hooghly, and Upper and Lower Union Dry Docks, also a graving dock and several patent slips. There are warehouses with drying grounds attached for the export trade in hides and skins. The docks are in railway communication with the jetties and the Indian broad gauge railways. Quays and cargo sheds are lit by electricity. The Port Commissioners' jetties have a length of 3,040 ft., capable of accommodating six large steamers, and by dredging a depth of 30 ft. is maintained alongside. The jetties are now being extended by 1,150 ft., making eight berths in all. The jetties are in railway communication with the Indian broad-gauge railways and the Kidderpur docks, and the Commissioners' line of railway extends along both banks of the river throughout the port. There are forty-two hydraulic cranes to lift 35 cwt. each; five hydraulic derricking cranes to lift 35 cwt.; one hydraulic crane to lift 5 tons, and two floating cranes to lift 30 tons. At Budge Budge, some 13 miles below the city, is situated the depôt for storage of petroleum, and there are fixed moorings where vessels can lie during discharge. There are 192 fixed moorings in the river, and the Kidderpur wet dock, admitting vessels of 470 ft. length of keel, 58 ft. 6 in. beam, and 27 ft. draught, provides twelve loading berths for general cargo. Vessels of greater length can be admitted by lowering the dock basin to the level of the river.

The limits of the port of Calcutta are :—

On the north, a line drawn from the boundary pillar at the Cossipore Gun Foundry Ghat to a point on the opposite side at Ghosery.

On the south, a line drawn from a masonry pillar placed at the mouth of the Budge Budge Khal to a pillar on Howrah side of the River Hooghly bearing N.W. of the first-named pillar.

The limits of the port include to the east and west :—

(a) So much of the River Hooghly and the shores thereof as are 50 yards above high water mark at spring tides.

(b) All lands comprised in the area occupied by the Kidderpur Docks and the adjoining works constructed for the purposes of such docks.

(c) That portion of Tolly's Nala which lies between Hastings Bridge and the entrance to Kidderpur Dock Canal.

(d) So much of Tolly's Nala as lies to the west of a line drawn across the Nala 25 ft. to the west of Hastings Bridge.

(e) The Petroleum Depôt at Budge Budge, including all lands, railway sidings, and other works appertaining to it.

The limits of the navigable river and channels leading to the port of Calcutta are :—On the north, the Port of Calcutta, as above defined; on the south, a line drawn east and west from the Eastern Channel floating light-vessel.

The limits of the said river and channels include all ports of the navigable channels called the Eastern and Western Channels, and of the River Hooghly between the northern and southern limits and below high water mark at spring tides.

Within the above limits the port and the navigable river and channels leading to the port are subject to the jurisdiction of the Commissioners for the Port of Calcutta.

Time Signals.—Chronometers can be checked here. Three balls, situated on the semaphore tower at Fort William, at the Port Commissioner's office, and at the Kidderpur Docks Tower, respectively, are hoisted close up

India—Calcutta (*continued*).

as preparatory about 5 minutes before the signal, and dropped every day at 1 p.m. Calcutta (Fort William) mean time, equal to 19 h. 6 m. 39·2 s. Greenwich mean time. A flag is also hoisted on the semaphore tower 20 minutes before the signal as preparatory.

Pilotage.—Compulsory. The pilot brig is usually to be found on station during the S.W. monsoon, May to October, some 7 to 8 miles S.W. of the Eastern Channel light-vessel, and during the N.E. monsoon, November to April, 4 to 5 miles from W. to N.N.W. of the same light-vessel. The navigation of the Hooghly is divided into twelve sections, and stations are used to indicate places to or from which vessels are piloted or in which steam is employed. These divisions or twelfths are as follows :—

Twelfths.	Places.	Distance from Fort William.	Miles between each Station.
$\frac{1}{12}$	To or from below Budge-Budge boundary pillars . . .	13·6	10·7
$\frac{2}{12}$	" " Hog River obelisk	23·6	10·0
$\frac{3}{12}$	" " Anchoring Creek obelisk	32·2	9·6
$\frac{4}{12}$	" " Diamond Harbour Telegraph Station	43·4	10·2
$\frac{5}{12}$	" " Bellary Tidal Semaphore	52·0	8·6
$\frac{6}{12}$	" " Mud Point Telegraph Station, E.	61·6	9·6
$\frac{7}{12}$	" " Cowcolly Lighthouse, W.	71·1	9·5
$\frac{8}{12}$	" " Sangor Lighthouse, E., or E. buoy of Western Channel	81·0	9·9
$\frac{9}{12}$	" " Upper Gaspar light-vessel, or line between I and J buoy, Western channel	90·1	9·1
$\frac{10}{12}$	" " Lower Middle Ground buoy or C.M.G. buoy, Western Channel	99·3	9·2
$\frac{11}{12}$	" " Intermediate light vessel or S.C.R. buoy, Western Channel	107·6	8·3
$\frac{12}{12}$ or full pilotage	" " Lower Reef buoy	115·8	8·2

The complete pilotage rates for each of these various divisions are set forth in the following tables :—

RATES FOR SAILING VESSELS NOT BEING TOWED BY STEAM.
Inward Pilotage.

Draught of Water.	$\frac{12}{12}$	$\frac{11}{12}$	$\frac{10}{12}$	$\frac{9}{12}$	$\frac{8}{12}$	$\frac{7}{12}$	$\frac{6}{12}$	$\frac{5}{12}$	$\frac{4}{12}$	$\frac{3}{12}$	$\frac{2}{12}$	$\frac{1}{12}$	B
Not over 8 ft.	Rs. 54	Rs. 49	Rs. 45	Rs. 40	Rs. 36	Rs. 31	Rs. 27	Rs. 23	Rs. 18	Rs. 14	Rs. 9		
Over 8 ft. but not over 9 ft.	85	78	71	64	57	50	43	36	29	22	15		
" 9 " " " " 10 " "	117	108	98	88	78	69	59	49	39	30	20		
" 10 " " " " " 11 " "	139	127	116	104	93	81	70	58	47	35	24		
" 11 " " " " " 12 " "	160	147	133	120	107	93	80	67	54	40	27		
" 12 " " " " " 13 " "	181	166	151	136	121	106	91	76	61	46	31		
" 13 " " " " " 14 " "	213	195	178	160	142	124	107	89	71	54	36		
" 14 " " " " " 15 " "	245	225	204	184	163	143	123	102	82	62	41		
" 15 " " " " " 16 " "	287	263	240	216	192	168	144	120	96	72	48		
" 16 " " " " " 17 " "	340	312	284	255	227	199	170	142	114	85	57		
" 17 " " " " " 18 " "	394	361	328	295	263	230	197	164	132	99	66		
" 18 " " " " " 19 " "	447	410	372	335	298	261	224	186	149	112	75		
" 19 " " " " " 20 " "	510	468	425	383	340	298	255	213	170	128	85		
" 20 " " " " " 21 " "	574	526	479	431	383	335	287	240	192	144	96		
" 21 " " " " " 22 " "	627	575	523	471	418	366	314	262	209	157	105		
" 22 " " " " " 23 " "	680	624	567	511	454	397	341	284	227	171	114		
" 23 " " " " " 24 " "	744	682	620	558	496	434	372	310	248	186	124		
" 24 " " " " " 25 " "	850	780	709	638	567	496	425	355	284	213	142		
" 25 " " " " " 26 " "	1001	918	835	751	668	589	501	418	334	251	167		
" 26 " " " " " 27 " "	1175	1078	980	882	784	686	588	490	392	294	196		
" 27 " " " " " 28 " "	1350	1238	1126	1013	900	788	675	563	450	338	225		

India—Calcutta (continued).

RATES FOR SAILING VESSELS NOT BEING TOWED BY STEAM.

Outward Pilotage.

Draught of Water.		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
over 8 ft.		54	49	45	40	36	31	27	23	18	14	9
over 8 ft. but not over 9 ft.		85	78	71	64	57	50	43	36	29	22	15
9	10	128	117	107	96	85	75	64	54	43	32	22
10	11	149	136	124	111	99	87	74	62	50	37	25
11	12	170	154	142	128	114	100	85	71	57	43	29
12	13	192	176	160	144	128	112	96	80	64	48	32
13	14	224	205	186	168	149	131	112	93	75	56	38
14	15	255	234	213	192	170	149	128	107	85	64	43
15	16	309	283	257	232	206	180	155	129	103	78	52
16	17	383	351	319	287	255	224	192	160	128	96	64
17	18	447	410	372	335	298	261	224	186	149	112	75
18	19	500	458	417	375	333	292	250	209	167	125	84
19	20	574	526	479	431	383	335	287	240	192	144	96
20	21	638	585	532	479	425	372	319	266	213	160	107
21	22	691	634	576	518	461	403	346	288	231	173	116
22	23	744	682	620	558	496	434	372	310	248	186	124
23	24	819	750	682	614	546	478	410	341	273	205	137
24	25	935	858	780	702	624	546	468	399	312	234	156
25	26	1102	1009	917	825	733	642	551	459	368	276	184
26	27	1275	1169	1063	957	850	744	638	532	425	319	213
27	28	1450	1330	1209	1088	967	846	725	605	484	363	242

RATES FOR STEAMERS AND SAILING VESSELS USING STEAM FOR THE WHOLE DISTANCE PILOTED.

Inward Pilotage.

Draught of Water.		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
		Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
over 8 ft.		40	36	33	30	27	23	20	17	13	10	8	6
over 8 ft. but not over 9 ft.		63	58	53	48	42	37	32	27	21	16	8	6
9	10	87	81	73	66	58	51	44	36	29	22	8	7
10	11	104	95	87	78	69	60	52	43	35	26	4	9
11	12	120	110	99	90	80	69	60	50	40	30	20	10
12	13	135	124	113	102	90	79	68	4	45	34	23	12
13	14	159	146	133	120	106	93	80	4	66	53	40	27
14	15	183	168	153	138	122	107	8	76	61	46	8	30
15	16	215	197	180	162	144	126	108	0	72	54	0	36
16	17	255	0	234	0	213	0	191	4	170	4	149	4
17	18	295	8	270	12	246	0	221	4	197	4	172	8
18	19	335	4	307	8	279	0	251	4	223	8	195	12
19	20	382	8	351	0	318	12	287	4	255	0	223	8
20	21	430	8	394	8	359	4	323	4	287	4	251	4
21	22	470	4	431	4	392	4	353	4	313	8	274	8
22	23	510	0	468	0	425	4	383	4	340	8	297	12
23	24	558	0	511	8	465	0	418	8	372	0	325	8
24	25	637	8	585	0	531	12	478	8	445	4	372	8
25	26	750	12	688	8	626	4	563	4	501	0	441	12
26	27	881	4	808	8	735	0	661	8	588	0	514	8

RATES FOR STEAMERS AND SAILING VESSELS USING STEAM FOR THE WHOLE DISTANCE PILOTED.

Outward Pilotage.

Draught of Water.		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
		Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
Not over 8 ft.		40 8	36 12	33 12	30 0	27 0	23 4	20 4	17 4	13 8	10 8	6 12	3 1
Over 8 ft. but not over 9 ft.		63 12	58 8	53 4	48 0	42 12	37 8	32 4	27 0	21 12	16 8	11 4	6 8
" 9 " " " "	10 "	96 0	87 12	80 4	72 0	63 12	56 4	48 0	40 8	32 4	24 0	16 8	8 0
" 10 " " " "	11 "	111 12	102 0	93 0	83 4	74 4	65 4	55 8	46 8	37 8	27 12	18 12	9 1
" 11 " " " "	12 "	127 8	115 8	106 8	96 0	85 8	75 0	63 12	53 4	42 12	32 4	21 12	11 1
" 12 " " " "	13 "	144 0	132 0	120 0	108 0	96 0	84 4	72 0	60 0	48 0	36 0	24 0	12 0
" 13 " " " "	14 "	168 0	153 12	139 8	126 0	111 12	98 4	84 0	69 12	56 4	42 0	28 8	14 1
" 14 " " " "	15 "	191 4	175 8	159 12	144 0	127 8	111 12	96 0	80 4	63 12	48 0	32 4	16 1
" 15 " " " "	16 "	231 12	212 4	192 12	174 0	154 8	135 0	116 4	96 12	77 4	58 8	39 0	19 1
" 16 " " " "	17 "	287 4	263 8	239 4	215 4	191 4	168 0	144 0	120 0	96 0	72 0	48 0	24 1
" 17 " " " "	18 "	335 4	307 8	279 0	251 4	223 8	195 12	168 0	139 8	111 12	84 0	56 4	28 1
" 18 " " " "	19 "	375 0	343 8	312 12	281 4	249 12	219 0	187 8	156 12	125 4	93 12	63 0	31 1
" 19 " " " "	20 "	430 8	394 8	359 4	323 4	287 4	251 4	215 4	180 0	144 0	108 0	72 0	36 1
" 20 " " " "	21 "	478 8	438 12	399 0	359 4	318 12	279 0	239 4	199 8	159 12	120 0	80 4	40 1
" 21 " " " "	22 "	518 4	475 8	432 0	388 8	345 12	302 4	259 8	216 0	173 4	129 12	87 0	43 1
" 22 " " " "	23 "	558 0	511 8	465 0	418 8	372 0	325 8	279 0	232 8	186 0	139 8	93 0	46 1
" 23 " " " "	24 "	614 4	562 8	511 8	460 8	409 8	358 8	307 8	255 12	204 12	153 12	102 12	51 1
" 24 " " " "	25 "	701 4	643 8	585 0	526 8	468 0	409 8	351 0	292 8	234 0	175 8	117 0	58 1
" 25 " " " "	26 "	826 8	756 12	687 12	618 12	549 12	481 8	413 4	344 4	276 0	207 0	138 0	69 1
" 26 " " " "	27 "	956 4	876 12	797 4	717 12	637 8	558 0	478 8	399 0	318 12	230 4	159 12	80 1

CHARGES PAYABLE BY SAILING VESSELS PILOTED THE WHOLE DISTANCE IN CALCUTTA, AND USING STEAM POWER WHILE BEING PILOTED OVER TWELFTHS INDICATED BELOW.

Draught.	Using Steam		Using Steam		Using Steam		Using Steam		Using Steam		Using Steam		Using Steam	
	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Not over 8 ft.		Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
Over 8 ft. but not over 9 ft.		40 8	41 12	42 12	44 0	45 0	46 4	47 4	48 4	49 8	50 8	51 12	52 0	53 0
" 9 " " " "	10 "	87 12	90 0	92 8	95 0	97 8	99 8	102 4	104 12	107 4	109 8	112 0	114 0	116 0
" 10 " " " "	11 "	104 4	107 4	110 0	113 0	115 12	118 12	121 8	124 8	127 4	130 4	133 0	136 0	139 0
" 11 " " " "	12 "	120 0	123 4	126 12	130 0	133 4	136 12	140 0	143 4	146 8	150 0	153 4	156 0	159 0
" 12 " " " "	13 "	135 12	139 8	143 4	147 0	150 12	154 8	158 4	162 0	165 12	169 8	173 4	176 0	179 0
" 13 " " " "	14 "	159 12	164 4	168 8	173 0	177 8	182 0	186 4	190 12	195 4	199 8	204 0	208 0	212 0
" 14 " " " "	15 "	183 12	188 12	194 0	199 0	204 4	209 4	214 4	219 8	224 8	229 8	234 12	239 12	244 12
" 15 " " " "	16 "	215 4	221 4	227 0	233 0	239 0	245 0	251 0	257 0	263 0	269 0	275 0	281 0	287 0
" 16 " " " "	17 "	255 0	262 0	269 0	276 4	283 4	290 4	297 8	304 8	311 8	318 12	325 12	332 12	339 12
" 17 " " " "	18 "	295 8	303 12	312 0	320 4	328 4	336 8	344 12	353 0	361 0	369 4	377 8	385 12	393 12
" 18 " " " "	19 "	335 4	344 4	354 0	363 4	372 8	381 12	391 0	400 8	409 12	419 0	428 4	437 8	446 12
" 19 " " " "	20 "	382 8	393 0	403 12	414 4	425 0	435 8	446 4	456 12	467 8	478 0	488 12	498 12	508 12
" 20 " " " "	21 "	430 8	442 8	454 4	466 4	478 4	490 4	502 4	514 0	526 0	538 0	550 0	562 0	574 0
" 21 " " " "	22 "	470 4	483 4	496 4	509 4	522 8	535 8	548 8	561 8	574 12	587 12	600 12	613 12	626 12
" 22 " " " "	23 "	510 0	524 4	538 8	552 4	566 8	580 12	594 12	609 0	623 4	637 4	651 8	665 8	679 8
" 23 " " " "	24 "	558 0	573 8	589 0	604 8	620 0	635 8	651 0	666 8	682 0	697 8	713 0	728 0	743 0
" 24 " " " "	25 "	637 8	655 0	672 12	690 8	708 4	726 0	743 12	761 4	779 0	796 12	814 8	832 8	850 8
" 25 " " " "	26 "	750 12	771 8	792 4	813 4	834 0	853 12	875 12	896 8	917 8	938 4	959 4	980 4	1001 4
" 26 " " " "	27 "	881 4	905 8	930 0	954 8	979 0	1003 8	1028 0	1052 8	1077 0	1101 8	1126 0	1150 8	1175 8

India—Calcutta (continued).

CHARGES PAYABLE BY SAILING VESSELS PILOTED THE WHOLE DISTANCE OUTWARD FROM CALCUTTA AND USING STEAM POWER WHILE BEING PILOTED OVER THE TWELFTHS INDICATED BELOW.

Draught.	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$	Using Steam $\frac{1}{12}$
Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
er 8 ft.	40 8	41 12	42 12	44 0	45 0	46 4	47 4	48 4	49 8	50 8	51 4	52 12
er ft. but not over 9 ft.	63 12	65 8	67 4	69 0	70 12	72 8	74 4	76 0	77 12	79 8	81 4	83 0
" " " 10 "	96 0	98 12	101 4	104 0	106 12	109 4	112 0	114 8	117 4	120 0	122 8	125 8
" " " 11 "	111 12	115 0	118 0	121 4	124 4	127 4	130 8	133 8	136 8	139 12	142 12	145 12
" " " 12 "	127 8	131 8	134 8	138 0	141 8	145 0	148 12	152 4	155 12	159 4	162 12	166 4
" " " 13 "	144 0	148 0	152 0	156 0	160 0	164 0	168 0	172 0	176 0	180 0	184 0	188 0
" " " 14 "	168 0	172 12	177 8	182 0	186 12	191 0	196 0	200 12	205 4	210 0	214 8	219 4
" " " 15 "	191 4	196 8	201 12	207 0	212 8	217 12	223 0	228 4	233 12	239 0	244 4	249 8
" " " 16 "	231 12	238 4	244 12	251 0	257 8	264 0	270 4	276 12	283 4	289 8	296 0	302 8
" " " 17 "	287 4	295 4	303 4	311 4	319 4	327 0	335 0	343 0	351 0	359 0	367 0	375 0
" " " 18 "	335 4	344 8	354 0	363 4	372 8	381 12	391 0	400 8	409 12	419 0	428 4	437 8
" " " 19 "	375 0	385 8	395 12	406 4	416 12	427 0	437 8	447 12	458 4	468 12	479 0	489 8
" " " 20 "	430 8	442 8	454 4	466 4	478 4	490 4	502 4	514 0	526 0	538 0	550 0	562 0
" " " 21 "	478 8	491 12	505 0	518 4	531 12	545 0	558 4	571 8	584 12	598 0	611 4	624 8
" " " 22 "	518 4	532 8	547 0	561 8	575 12	590 4	604 8	619 0	633 4	646 12	662 0	676 8
" " " 23 "	558 0	573 8	589 0	604 8	620 0	635 8	651 0	666 8	682 0	697 8	713 0	728 8
" " " 24 "	614 4	631 8	648 0	665 8	682 8	699 8	716 8	733 12	750 12	767 8	784 12	801 12
" " " 25 "	701 4	720 8	740 0	759 8	779 0	798 8	818 0	837 8	857 0	876 8	896 0	915 8
" " " 26 "	826 8	849 8	872 12	895 12	918 12	941 8	964 4	987 4	1010 0	1033 0	1056 0	1079 0
" " " 27 "	956 4	982 12	1009 14	1035 12	1062 8	109 0	1115 8	1142 0	1168 12	1195 4	1221 12	1248 4

A vessel applying for a particular pilot, and all foreign vessels, are bound to take a Government leadsman whenever one is available. Charge inward or outward, 16 Rs. Compensation to pilot of outward bound vessel being carried away to sea, 10 Rs. per day.

Port Charges.—Port Dues :—4 a. per reg. ton ; if in ballast or not carrying passengers, 3 a. per reg. ton. **Harbour Pilotage :—**Hauling to or from swinging moorings, 10 Rs. ; hauling in or out of fixed moorings, each operation, 16 Rs. removing from one fixed mooring to another, 50 Rs. ; transporting from one part of port to another, 14 Rs. ; hooking, 16 Rs. ; re-mooring, 16 Rs. **Docking :—**Hauling in and out of dock, 30 Rs. ; buoy or hauling in and out of dock, 10 Rs. **Harbour-master's Fees :—**Extra fee for Harbour-master on Sundays, holidays, 16 Rs. ; detention of Harbour-master, per day or night, 10 Rs. **Hire of Shackle :—**Up to 30 days, 4 a. per day ; after 30 days, 2 a. **Measurement :—**Of a vessel to fix tonnage, 10 Rs. ; space occupied by crew, 10 Rs. ; engine room and crew space, 10 Rs. **Boat Hire :—**Hire of heave-up boat, 20 Rs. per day ; steam anchor boat, 50 Rs. ; hawser boat, 6 Rs. per day. **Gangway Hire :—**All vessels berthed at the Kidderpur Docks, including the coal dock, for the hire of gangways and services rendered in placing and removing them, irrespective of the number of gangways supplied, and the number of days a vessel is alongside the quay, 2 Rs. per vessel. **Jetty Hire :—**Including one crane, 35 s. per day ; on Sundays, Christmas Day, New Year's Day, and Good Friday, 50 Rs. per day. **Hire of Tubs, trays, or shoots, 1 R. per day each.** **Water :—**Drinking water from Corporation boats, 5 Rs. per 1,000 gallons ; boiler water, 12 a. to 1 R. per ton. **Hospital Dues :—**4½ pies per ton. **Licensed Measurer's Fees :—**½ a. per bale on jute, less 40 per cent. if whole cargo measured ; 2½ a. per ton for other measurement goods, less 40 per cent. rebate. **Stevedore's Rates :—**Discharging salt, 4 a. per ton, plus hire of shoots and stages, or 6 a. per ton inclusive ; general cargo, 3½ to 4½ a.

India—Calcutta (*continued*).

loading bag cargo, $3\frac{1}{2}$ to $4\frac{1}{2}$ a. ; measurement, 5 to 6 a. ; general cargo, bag and measurement, 4 to $4\frac{1}{2}$ a.

Light Dues :—Burma coast lights, 1 a. 6 p. per ton ; Straits lights, 6 p. per ton ; Basses lights, $\frac{1}{16}$ d. per ton ; Minicoy lights, $\frac{1}{16}$ d. per ton. **Moor ing Hire** :—Per day, all the year round :—

All vessels up to	199 tons									Rs.	a.
from	200 to 299 tons									1	8
"	300 "	399 "								2	0
"	400 "	499 "								2	8
"	500 "	599 "								3	0
"	600 "	999 "								3	8
"	1,000 "	1,249 "								4	0
"	1,250 "	1,499 "								5	0
"	1,500 "	1,749 "								6	0
"	1,750 "	1,999 "								7	0
"	2,000 "	2,249 "								8	0
"	2,250 "	2,499 "								9	0
"	2,500 "	2,749 "								10	0
"	2,750 "	2,999 "								11	0
"	3,000 and upwards									12	0
Occupation of swinging moorings										15	0
										2	0

Towage :—Towing a vessel in ballast by the *Hetty* and one steam hopper or by two steam hoppers :—

Budge Budge to Calcutta or Garden Reach moorings	Rs.
" to dry dock above bridge	200
Dry Dock above bridge to Calcutta or Garden Reach moorings, or vice versa	250
For moving a vessel from one mooring to another below bridge, or between a mooring below bridge and the entrance of the Kidderpur Docks	150
	100

For a small vessel for which the *Hetty* alone would be sufficient, two thirds of any of the above charges. For a small vessel for which one steamer would be sufficient, half of any of the above charges.

Half of any of the above charges when one tug belonging to the port commissioners is assisted by one not their property.

Hire of *Hetty* for a day or part of a day, 250 Rs. ; hire of steam hopper for a day or part of a day, 150 Rs. ; towing through the bridge only, dhooli between 100 tons and 150 tons, 25 Rs. ; between 150 tons and 200 tons, 32 Rs.

Charges for assisting vessels from the jetties to the docks by the *Rescue*, 100 Rs. for each operation.

The charge for the services of the tugs *Reserve*, *Retriever*, and *Acti* when employed on salvage work, 600 Rs. for every 12 hours or part of 12 hours, with a minimum charge of 600 Rs. **River Due** :—Upon goods land from or shipped into any sea-going vessel lying or being within the limit of the port, whether such goods are or are not landed or shipped at any dock, wharf, quay, stage, jetty, or pier belonging to the Commissioners, value on all goods, including coal other than bunker coal and manganese ore, 4 p. per ton ; on coal loaded into a vessel's bunkers for consumption on board the vessel, 3 a. per ton ; on manganese ore, $1\frac{1}{2}$ a. per ton. **Stevedore** : For putting petroleum in cases out of the hold and over side of vessels or charging at Budge Budge, steamers, $3\frac{1}{2}$ a. per ton of 27 cases ; from sailing vessels, $2\frac{1}{2}$ a. per ton of 27 cases. **Cranage** :—

Rates for hire of Cranage at the Kidderpur Docks or Jetties.

It is optional with a vessel whether she uses her own or the commissioners' cranes. If she uses the latter, the charges will be as follows :—

India—Calcutta (continued).

							Rs.	a.	p.
For each 35 cwt. crane, per day	.	.	.	.	.	.	5	0	0
" " " per $\frac{1}{2}$ day	.	.	.	.	.	.	2	8	0
" 5 ton " per day	.	.	.	.	.	.	10	0	0
" " " per $\frac{1}{2}$ day	.	.	.	.	.	.	5	0	0

Day to be from 6 a.m. to 6 p.m. ; half day to be from 6 a.m. to noon, or noon to 6 p.m. Any part of a day less than a half will be charged as a half day. On a ship applying for cranes, if they are supplied, payment must be made for at least half a day, whether they are used or not. Should the application have been for the first half only of a day, and the crane be required for a longer time, another application must be made through the shed officer at least one hour before the expiration of the first half of the day. Application for cranes required for the whole or half of the following day to be made by 4 p.m. to the shed officer. Should cranes for which application has been made for the whole day not be required for more than the first half day, written notice must be given to the shed officer at least one hour previous to the end of the half day, or full day will be charged for. All applications for cranes to be in regular book forms with counterfoils ; and to be signed by the ship's officer on duty, showing number of cranes required, from what time, and for how long.

Night Work.

Charge for each crane per hour between 6 p.m. and 6 a.m., covering cost of all other services rendered—

	Exports.	Imports.
	Rs. a.	Rs. a.
If 3 cranes or less	3 0	2 12 each.
If 4 cranes or less	2 12	2 8 "
If 5 cranes or more	2 8	2 4 "

With a minimum of 80 Rs. for half a night. This minimum may, however, be divided between two or more vessels.

A vessel supplied with electric light for deck and holds will be charged 7 Rs. 8 a. from dark to midnight and 7 Rs. 8 a. from midnight to daylight.

Rate for haulage of cranes from jetties to any point on the Port Trust Railway and back—

	Rs.
6-ton crane	15
10-ton crane	25

Gross weight on all goods, except metal, red and white lead, will be charged.

Scale of charges for 30-ton floating crane and 100-ton sheers :—

	30-ton.	100-ton.
	A. p.	A. p.
For each lift not exceeding 2 tons, rate per cwt.	1 0	1 0
For each lift exceeding 2 tons, but not exceeding 4 tons, rate per cwt.	1 6	1 6
For each lift exceeding 4 tons, but not exceeding 10 tons, rate per cwt.	3 0	3 0
For each lift exceeding 10 tons, rate per cwt.	6 0	6 0
For each lift exceeding 30 tons, rate per cent.	—	8 0

Quick Dispatch.—The following charges are made by the Commissioners for the port of Calcutta, in addition to their ordinary charges, for extra dispatch in the loading and discharge of vessels, in consideration of the additional charges incurred in effecting such dispatch :—

1. *Loading Coal.*—The average rate of loading coal into suitable vessels being 1,000 tons a day, the shippers or the agents of the vessel may make special application to the traffic manager for a quicker rate of loading ; and, if it is found possible to arrange for it, a payment shall be made at 400 Rs. for

India—Calcutta (*continued*).

each day, by which the loading days, calculated on the 1,000 tons a day basis, are reduced, such payment to cover charges for night work. For instance, at the request of an interested party, a vessel carrying 5,000 tons is loaded in 4 days, and the dispatch money of 400 Rs. becomes due. If a vessel carrying 7,000 tons be loaded in 5 days, the party who asked for dispatch would pay 800 Rs.

2. *Discharging Oil Vessels at Budge Budge*.—The advertised rate of discharge being 6,000 cases a day, dispatch money for reducing the number of days in which a vessel is discharged, calculating on this basis, shall be paid for by the person asking for rapid discharge at the following rates :—

	Rs.
1 day	50
2 days	125
3 days	250
Each day over 3 days	100 extra.

KIDDERPUR GRAVING DOCK.*Scale of Charges.*

The dock is intended principally for the painting and cleaning of vessels, and the execution of very slight repairs. Its use for heavy repairs will only be given in special circumstances.

The terms are as follows, and will include removal of vessel from tidal basin into graving dock and back, docking, pumping, shoring, and undocking; also the use of stages and stage-ropes for cleaning and painting :—

	Rs.	a.	p.
For the first 24 hours, per gross ton	0	6	6
From the second to the eighth day inclusive—for every six hours or part thereof	50	0	0
From the ninth to the twentieth day inclusive—for every six hours or part thereof	75	0	0
For re-docking within the period for which the vessel has been regulated or re-regulated for each re-docking, per day	120	0	0

After 20 days the Commissioners reserve to themselves the right to increase the daily charge up to any sum not exceeding 500 Rs.

The Commissioners will not undertake the work of cleaning, painting, or repairing vessels; owners, agents, or masters will have to make their own arrangements for the execution of the work.

No commission or other fees will be levied on stores brought either by land or water into the dock for cleaning, painting, or repairing.

No dock dues will be charged on vessels passing through the tidal basin to or from the graving dock.

The cost of deodorizing and pumping out of the dry dock bilge water and of water admitted to dilute bilge water shall be borne by the vessel.

CHITTAGONG.

Chittagong, in lat. 22°25' N., long. 91°50' E., is situated on the river Karnafuli.

Population.—Town 25,000.

Imports.—Salt and kerosene.

Exports.—Jute, rice, cotton, tea, and hides.

Accommodation.—There are two bars at the entrance of the river, on which the greatest depth at low water spring tide is 13 ft. Springs rise 15 ft.; neaps 10 ft. The river is well buoyed. Vessels arriving off the

India—Chittagong (continued).

Entrance at night should anchor with Norman Point lights bearing E.N.E., distant about 3 miles, in 5 fathoms low water. The bar breaks very heavily during S.W. monsoons, and great caution is then necessary in entering. A pilot cutter flying a red and white flag may at all times be found about 3 miles S.W. of the outer bar buoys. Masters should beware of strong flood tides, which are apt to sweep vessels to the N. and W. of the mouth of the river. A vessel with a cargo of 4,300 tons of salt has entered the river and proceeded to the moorings without discharging outside. During the discharge of ballast or whilst loading, a Custom House officer remains on board at a charge of 1 R. per day. The port is considered healthy; there is a government surgeon whose services may be retained by vessels at moderate rates. Fresh provisions may be obtained cheaply and in abundance. Vessels of 1,400 tons can be beached on a bank of hard sand. There is an iron jetty, belonging to the Government, 870 ft. long; depth alongside, 24 ft. There are ten hydraulic cranes on this jetty. The iron pile pier, 130 ft. long, is now only used to land passengers from small boats.

Pilotage.—Compulsory. Rates are as follows :—

Draught in feet.	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
For out	Rs. a. 18 12 21	Rs. a. 4 26 4 31	Rs. a. 4 37 8 43	Rs. a. 12 50 59	Rs. a. 6 68 12 78	Rs. a. 2 87 8 100	Rs. a. 112 8 128 2	Rs. a. 143 12 162 8								

For every foot, or part of a foot exceeding 6 in., over 23 ft. draught, an additional 20 Rs. to be paid. The bars may only be crossed between sunset and sunrise by the special permission of the port officer; extra fee to pilot, Rs.

Towage :—

Gross Tonnage of Vessels.		Ballast Ships in and loaded Outwards.	Loaded Ships Inward and Outward.
vessels under 500 tons		325	420
from 500 to 550 tons		337	449
over 550	600	360	488
600	650	382	509
650	700	405	540
700	750	427	569
750	800	450	600
800	850	495	660
850	900	540	720
900	950	585	780
950	1,000	630	840
1,000	1,050	661	880
1,050	1,100	683	908
1,100	1,150	704	938
1,150	1,200	726	966
1,200	1,250	747	996
1,250	1,300	769	1,024
1,300	1,350	791	1,052
1,350	1,400	812	1,082
1,400	1,450	834	1,110
1,450	1,500	855	1,140

For every ton exceeding 1,500 tons the charge is 8 annas at all times

1 Vessels taking steam one way to pay two-thirds loaded inward and outward rates.

2 No reduction made for vessels towed between Chittagong and sea.

3 On two or more vessels applying for steam at the same time, preference will be given to that first cleared at the Custom House, provided she be ready to sail.

India—Chittagong (continued).

4. Demurrage fine of 50 Rs. will be charged for every time steam is raised, but not availed of by a vessel making the application.
5. In the event of a vessel getting aground whilst being towed, special agreement shall be made by the captain of the tug services.
6. Should the services of the tug be required to shift a ship from one mooring to another, there shall be an extra charge made of 100 Rs.
7. When the *Gekko* is required to render assistance in case of fire, stranding, etc., within port limits, a daily charge of 250 Rs. will be made for her services, in addition to reasonable compensation for any damages caused to her in rendering such assistance. The minimum charge to be 250 Rs.

For use of spring attached to the steam-tug *Gekko*, 25 Rs.

For use of hawser, 25 Rs.

For use of wire and shackle, 3 Rs. per day.

Mooring :—Fixed moorings.

				Rs. a.	
All vessels up to		199 tons gross measurement		1	8 per diem.
" from 200 to	299	" "	"	2	0 "
" " 300	399	" "	"	2	8 "
" " 400	499	" "	"	3	0 "
" " 500	599	" "	"	3	8 "
" " 600	999	" "	"	4	0 "
" " 1,000	1,249	" "	"	5	0 "
" " 1,250	1,499	" "	"	6	0 "
" " 1,500	1,749	" "	"	7	0 "
" " 1,750	1,999	" "	"	8	0 "
" " 2,000	2,249	" "	"	9	0 "
" " 2,250	2,499	" "	"	10	0 "
" " 2,500	2,749	" "	"	11	0 "
" " 2,750	2,999	" "	"	12	0 "
" " 3,000 and upwards		" "	"	15	0 "

Mooring and unmooring fee, 32 Rs. each. Harbour-master's fee, if on Sunday, public holiday or at night, 16 Rs.

Swinging Buoys.—

				Rs a.	
All vessels from	1 up to	299 tons gross measurement		1	0 per diem.
" " 300	499	" "	"	1	8 "
" " 500	699	" "	"	2	0 "
" " 700	899	" "	"	3	0 "
" " 900	1,099	" "	"	4	0 "
" " 1,100	1,499	" "	"	5	0 "
" " 1,500 and upwards		" "	"	6	0 "

Mooring and unmooring fee, 16 Rs. each. Harbour-master's fee, if on Sunday, public holiday, or at night, 10 Rs.

Port Charges.—Port Dues :—4 annas per reg. ton. **Labour :—**7 to 8 annas per man per day. Jute can be loaded at 6 to 7 annas per ton. Salt is discharged at 15 Rs. per 1,000 maunds. Dubashes supply vessels at 5 annas per head. **Transport Charge :—**On all vessels entering and leaving the port, 8 Rs. **Hospital Port Dues :—**1 anna per reg. ton. **Ballast :—**2 Rs per load of 5 tons taken from foreshore or port lands; ballast guards, 1 R per day, Sundays, public holidays, or night time, 2 Rs. per day. Discharge at 4 to 6 annas per ton. **Water :—**10 Rs. for any quantity up to 1,000 gallons. **Wharfage :—**Discharging salt, 6 annas per 100 maunds. For use of platform and bucket for discharging, 5 Rs. per day.

Pro Forma Charges on a steamer of 3,852 tons register :—

	Rs.	a.	p.
Port dues at 4 annas per ton	963	0	0
River pilotage, in, 26 ft. (loaded with cargo)	222	8	0
River pilotage, out, 15 ft. (in ballast)	59	6	0
Mooring and unmooring vessel	64	0	0
Transport charge in and out	16	0	0
Hospital port dues at 1 anna per ton	240	12	0
Carried forward.	1,565	10	0

India—Chittagong (continued).

	Rs.	a.	p.
Brought forward	1,565	10	0
Harbour-master's fee for mooring and unmooring vessel on Sunday, holiday, and at night	16	0	0
Use of Government 2 wire hawser for 14 days at 6 Rs. per day	84	0	0
Shifting vessel, one occasion	16	0	0
Occupying jetty mooring for 14 days at 15 annas per day	210	0	0
1,000 gallons of spring water	10	0	0
	1,901	10	0 = £126 15s. 6d.

BOMBAY PRESIDENCY.

WEIGHTS.

		Avoirdupois.		
		Lb.	oz.	drs.
36 tanks	= 1 tipari (or tipprees).		5	9·51
2 tipari	= 1 seer	= 0	11	3·2
1 seer, payali, paily, } adali, adowley, or } adoly	.. .. .	= 2	12	12·8
3 payali	= 1 phara	= 44	12	12·8
3 phara	= 1 khandy (candy)	= 358	6	6·4
5 phara = 1 muda, or	17·9715 cubic ft.	= 14	quarters.	
17½ payalis	= 1 fara of rice	= 6·04	gallons.	
17½ "	= 1 fara of other grain	= 6·12	"	
8½ "	= 1 fara of lime or chunam.			

FOR SALT.

1 adhvalli	= 4·117 pints.
10½ adhvalli = 1 fara or pharo	= 5·797 gallons.
100 pharo = 1 ano	= 72·474 bushels.
16 ano = 1 ras	= 144·948 quarters.

The fara for salt contains 1,607·61 cubic in., and there is a ser for liquids of 60 tolas, or 42·78 pic in., or 1·2343 pints.

At Karachi everything is sold by weight.

TONNAGE SCALE.

Hides and skins, whether in bales or bundles, by measurement.
Oil on the outside measurement of the cask.
When freight is payable on weight, the same is on the net weight delivered.
The tonnage scale for steamers is on the basis of 40 cub. ft. to the ton,
it in no case to exceed 20 cwt. dead weight.

ARTICLES.	STEAMERS.	STEAMERS.	SHIPS.
	OLD SCALE. To the ton.	NEW SCALE. To the ton.	To the ton.
Aloes, in kegs	40 ft.	..	16 cwt.
Alum, in bags	16 cwt.	..	20 "
Annatto, in cases	40 ft.	..	50 ft.
Apparel	"	..	"
Arrowroot, in cases	"	..	"
Assafoetida, in cases	"	..	"
Bajree, in bags	16 cwt.	18 cwt.	20 cwt.
Barilla	"	..	"
Barley, in bags	"	15 cwt.	"
Beeswax, in cases	40 ft.	..	50 ft.
Betel nut, in bags	13 cwt.	..	16 cwt.
Black wood, in straight square logs	40 ft.	..	50 ft.
" otherwise	16 cwt.	..	20 cwt.

India—Bombay Presidency (*continued*).TONNAGE SCALE—*continued*.

ARTICLES.	STEAMERS. OLD SCALE. To the ton.	STEAMERS. NEW SCALE. To the ton.	SHIPS. To the ton.
Bone meal and bone dust . . . . .	..	20 cwt.	20 cwt.
Bones, crushed, in bags . . . . .	..	..	..
" loose . . . . .	..	..	..
Books	40 ft.	..	50 ft.
Borax, in cases . . . . .	..	..	..
" in bags	16 cwt.	..	20 " cwt.
Buffalo horns, in bundles . . . . .	..	6 cwt.	8 " "
Bullion	per cent.	..	per cent.
Camphor, in cases	40 ft.	..	50 ft.
Canes, rattans, in bundles	13 cwt.	..	16 cwt.
Cardamoms, in bundles	40 ft.	..	50 ft.
Cassia Lignea, fistula, and buds . . . . .	..	..	..
Chasum	8 cwt.	..	10 cwt.
China root, in cases	40 ft.	..	50 ft.
Cigars . . . . .	..	..	..
Cinnamon, in bales . . . . .	..	..	6 cwt.
" in cases	40 ft.	..	50 ft.
Cloves, in cases . . . . .	..	..	..
" in bags or frazils	8 cwt.	..	10 cwt.
Coal . . . . .	..	..	20 "
Cocoa, in bags	10 cwt.	..	12 "
Coculus Indicus, in bags	13 "	..	16 "
Coffee, in cases	40 ft.	..	50 ft.
" in bags or frazils	12 cwt.	..	16 cwt.
Coir, in bales	40 ft.	..	50 ft.
" in bundles or loose	5 cwt.	..	6 cwt.
" rope, in coils	40 ft.	..	8 "
Colocynth, in cases . . . . .	..	..	50 ft.
Colombo root, in bags	8 cwt.	..	14 cwt.
Copra, in robins . . . . .	..	..	12 "
" in bags . . . . .	..	..	12 "
Coral, rough (not specimen), in bags	16 cwt.	..	20 "
Cotton seed . . . . .	..	13 cwt.	..
Cotton, in bales	40 ft.	..	50 ft.
Cowries, in cases . . . . .	..	..	..
" in bags	16 cwt.	..	20 cwt.
Cubebs	10 "	..	12 "
Cummin seed, in cases	40 ft.	..	50 ft.
Cutch, or terra Japonica, in bags or baskets, unscrewed	13 cwt.	..	16 cwt.
Dates, wet	16 "	..	20 "
" dry	13 "	..	16 "
Dhall, crushed, in bags . . . . .	..	17 cwt.	..
Dragon's blood, in cases	40 ft.	..	50 ft.
Ebony, square and straight . . . . .	..	..	..
" otherwise	16 cwt.	..	20 cwt.
Elephants' teeth, in cases	40 ft.	..	50 ft.
" in bundles	14 cwt.	..	18 cwt.
" loose	16 "	..	20 "
Flour . . . . .	..	..	..
Furniture	40 ft.	..	50 ft.
Galingals	10 cwt.	..	12 cwt.
Galls, in bags	13 "	..	16 "
" in cases	40 ft.	..	50 ft.
Ginger, dry, in cases . . . . .	..	..	..
" in bags	10 cwt.	..	12 cwt.
Gram, in bags	15 "	17 cwt.	20 "
Ground nuts, shelled	13 "	..	16 "
" unshelled . . . . .	..	6 cwt.	8 "
Gums of all kinds, in cases	40 ft.	..	50 ft.
Gum olibanum, in bags	13 cwt.	..	16 cwt.
Hurtall, in cases	40 ft.	..	50 ft.
Hemp, in screwed bales . . . . .	..	..	..
" loose or in bundles	5 cwt.	..	7 cwt.
Hides and skins, in screwed bales	40 ft.	..	50 ft.
" loose and in small bundles . . . . .	..	..	12 cwt.

India—Bombay Presidency (continued).

TONNAGE SCALE—continued.

ARTICLES.	STEAMERS. OLD SCALE. To the ton.	STEAMERS. NEW SCALE. To the ton.	SHIPS. To the ton.
Horns, buffalo and cow, loose	13 cwt.	..	16 cwt.
" deer, loose	6 "	..	8 "
Horn tips, of any kind	13 "	..	16 "
Indigo, in cases	40 ft.	..	50 ft.
Jackwood . . . . .	..	..	..
Jowaree, in bags	16 cwt.	18 cwt.	20 cwt.
Lac dye, in shells or cases	40 ft.	..	50 ft.
Lang, in bags	16 cwt.	18 cwt.	20 cwt.
Lang, crushed, in bags . . . . .	..	17 "	..
Linseed, in bags	16 cwt.	..	18 cwt.
Mace, in cases	40 ft.	..	50 ft.
Maize, in bags . . . . .	..	16 cwt.	..
Mother-of-pearl, in cases	40 ft.	..	50 ft.
" in bags	16 cwt.	..	20 cwt.
Mowra flowers . . . . .	..	18 cwt.	..
Mowra seed, in bags	13 cwt.	..	16 cwt.
Munjeet or madder root, in cases or bales	40 ft.	..	50 ft.
Munjeet or madder root, in bundles or bags	8 cwt.	..	12 cwt.
Musk, in cases	40 ft.	..	50 ft.
Mussor, in bags	16 cwt.	20 cwt.	20 cwt.
Myrabolams, in bags	13 "	..	16 "
Niger seed	14 "	..	17 "
Nutmegs, in cases	40 ft.	..	50 ft.
Nux vomica, in cases . . . . .	..	..	..
" in bags	13 cwt.	..	16 cwt.
Oil, of any kind, in casks	40 ft.	..	210 Im. gals.
Oil seeds—			
Castor seed	14 cwt.	..	17 cwt.
Teel or gingelley seed	14 cwt.	15 cwt.	..
Rape seed . . . . .	..	16 "	..
Mustard seed . . . . .	..	16 "	..
Opium	per chest.	..	per chest.
Paddy, in bags	13 cwt.	..	16 cwt.
Pepper, in bags	13 "	..	16 "
Pimento	12 "	..	14 "
Plumbago, in bags	16 "	..	20 "
Poppy seed, in bags (1½ cwt.)	14 "	..	17 "
" double bags (1½ cwt.)	13 "	..	16 "
" single bags (1¼ cwt.)	14 "	..	17 "
" double bags (1¼ cwt.)	14 cwt.	..	17 cwt.
Rattans, in bundles	13 "	..	16 "
" ground	13 "	..	16 "
Red wood	13 "	..	16 "
Rhubarb, in cases	40 ft.	..	50 ft.
Rice, in bags	16 cwt.	18 cwt.	20 cwt.
Safflower, in cases	40 ft.	..	50 ft.
" in screwed bales . . . . .	..	..	..
" in bags	8 cwt.	..	10 cwt.
Sago, in cases	40 ft.	..	50 ft.
Sal ammoniac, in cases	40 ft.	..	50 ft.
" in bags	15 cwt.	..	18 cwt.
Salt . . . . .	..	{ 28 Indian maunds of 82½ lb.	{ 28 Indian maunds of 82½ lb.
Saltpetre	16 cwt.	..	20 cwt.
Sandal and sapan wood	11 "	..	16 "
Sealing wax, in cases	40 ft.	..	50 ft.
Senna, in bags	5 cwt.	..	6 cwt.
" in bales	40 ft.	..	50 ft.
Shells, rough, in bags	16 cwt.	..	20 cwt.
Silk, in bales	8 "	..	10 "
" in cases	40 ft.	..	50 ft.
Soap, in cases . . . . .	..	..	..
Sugar, in bags	16 cwt.	..	20 cwt.
Talc . . . . .	..	..	..

India—Bombay Presidency (*continued*).**TONNAGE SCALE—continued.**

ARTICLES.	STEAMERS. OLD SCALE.	STEAMERS. NEW SCALE.	SHIPS.
	To the ton.	To the ton.	To the ton.
Tallow	40 ft.	..	50 ft.
Tamarinds	15 cwt.	..	18 cwt.
Tea, in chests	40 ft.	..	50 ft.
Timber, teak; square planks and ploon	"	..	"
Timber, teak; round, one-fifth off . . . . .	..	..	..
Tobacco, in bales	40 ft.	..	50 ft.
Tortoise shells, in chests	11 "	..	13 "
Turmeric, in bags	11 cwt.	..	13 cwt.
Tutenague	16 "	..	20 "
Unrated wood	11 "	..	14 "
Weed seed, in bags . . . . .	..	10 cwt.	..
Whanghees (<i>vide</i> canes)	13 cwt.	..	16 cwt.
Wheat	16 "	18 cwt.	20 "
Wines and spirits, in casks	40 ft.	..	50 ft.
" " in cases	"	..	"
Wool, in screwed bales	"	..	"
Zedory	16 cwt.	..	20 cwt.

The standard ton at Bombay for Measurement Goods shall be taken at 50 cubic feet for ships.

BOMBAY.

Bombay is in lat. 18°55' N., long. 72°54' E. Distance by sea from Liverpool, via Suez Canal, 6,260 miles; via Cape of Good Hope, 10,525 miles.

Population.—776,006.

Imports.—Piece goods, iron and steel, machinery, timber, kerosene, etc.

Exports.—Wheat, seeds, cotton, twist and yarn, hides, opium, manganese ore, tea, etc.

Accommodation.—Bombay harbour is very capacious, being 14 miles long from north to south, with a general width of from 4 to 14 miles. The usual anchorage is on the west side of the harbour, off town. There is from 23 to 30 ft. of water in the port.

Tides.—By the outer floating light it is high water, full and change 12 h.; but at the dock head, and where ships moor, at 11 h. 31 m.; extraordinary springs rise 18 ft. 6 in.; ordinary, 15 to 16 ft.; neaps, 9 ft.

It is necessary for every master sailing in or out of the harbour to remember that the tides rise and fall from 14 to 18 ft. on the springs, and 9 or 10 ft. at the quadratures. Except upon the reefs or shoals, the bottom is soft mud or clay.

Wet Docks.—Princes Dock has an area of 30 acres of water; it is 1 ft. long, and 1,000 ft. wide, with a jetty at one end 700 ft. long by 24 ft. wide. The length of the berthage in the dock is 5,960 ft., and along the outer wall next the harbour, 1,590 ft. There are two entrances, which are respectively 66 ft. and 55 ft. in width. The depth on the sills of both is 28½ ft. at high water ordinary spring tides. The bottom of the dock has been excavated 3 ft. below the sills. There are 55 movable hydraulic cranes (one of which is capable of lifting 5 tons) for working cargo, capable of lifting 30 cwt. through a height of 60 ft.; one 30-ton crane is also provided. There are also two capstans capable of sustaining a strain of 5 tons, and four cranes, for warping vessels at the entrances. Thirteen close sheds, having

India—Bombay (continued).

area of 416,509 sq. ft., have been erected on the wharves, besides nine warehouses, with an area of 170,474 sq. ft.

Fresh water is laid on along the wharf, and is available from numerous hydrants for ordinary use, and in case of fire.

A new dock is to be constructed, of 49 acres water area ; it will have a turning space of 1,100 ft. by 1,075 ft., and quayage inside dock of 10,000 ft. ; entrance, 100 ft. wide ; depth on sill, high water ordinary spring tides, 10 ft. 3 in. In connection there will be a dry dock, 1,000 ft. long and 100 ft. wide.

The Victoria Dock contains 25 acres of water, 16 berths, and 3 jetties. The length of berthage in the dock is 7,245 ft. The communication passage with the Prince's Dock is 64 ft. wide, closed by a caisson. The sea entrance is 80 ft. wide, and there is a depth of 30½ ft. on the sill at high water ordinary spring tides. There are 59 movable hydraulic cranes, each lifting 30 cwts. through a height of 60 ft. One 100-ton crane is also provided. The dock is 1,270 ft. long and 1,000 ft. wide. The bottom of the dock has been excavated 3 ft. below the sill. Fifteen close sheds, having an area of 674,323 sq. ft., have been erected on the wharves, and a partly-open shed for rail-borne cargo, having an area of 41,472 sq. ft. ; besides five warehouses, with an area of 180,401 sq. ft. There are five 11-ton capstans for warping vessels at the entrance.

The following are the dry docks :—

Dock.	Length over all, in feet.	Width of Entrance at High Springs Level, in feet.	Depth on the Sill at High Springs, in feet.
Government—			
Lower Bombay	256	51½	16½
Middle Bombay	183	51½	16½
Upper Bombay	200½	45½	14½
Lower Duncan	316½	58	24
Upper Duncan	302½	58	24
New Torpedo	160	25	13½
& O. S.N. Co.—			
Old Mazagon	154	35	5
Ritchie	495	66	18
I. S. N. Co.—			
Mogul Lower	217	60	15½
Mogul Upper	196	47	15½
Merewether (Port Trust).	538½	65½	28½
Viegas Patent Slip	232 (cradle) 1,200 tons,	has taken vessel drawing 14 ft.	

The Lower and Middle Bombay can be used as one dock. The Duncan docks can be used together, giving 625 ft. 10½ in. on blocks, with caisson in the outer groove.

The Mogul docks can be used as one dock, but the channel leading to them has only 14 ft. at high springs in it.

The Merewether dock can be lengthed by 25 ft. by putting the caisson at the outer stop. Repairs of every description can be done. There are mating sheers to lift 50 tons ; sheers to lift 80 and 20 tons ; cranes to lift 50, 20, 10 tons, and numerous smaller ones.

The Sassoon wet dock has a water area of 3½ acres. The dock is 638 ft. long and 240 ft. wide ; width of entrance, 40 ft. ; depth on the sill at

India—Bombay (*continued*).

high ordinary spring tides, 21½ ft.; length of quayage, 1,758 ft. The entrance gates have been removed, and the dock is now principally used by Government barges and native craft.

There is a Government Basin of 4½ acres; width of entrance, 60 ft. depth on sill at high springs, 23 ft. The Carnac Basin has a water area of 9½ acres. The Government docks are not available for any but Government vessels; they are on the west side of the harbour near the Custom House.

No vessel shall use any of the Government chain moorings, whether fixed or swinging, without permission of the Director of the Royal Indian Marine.

Time Signals.—(a) A ball is hoisted at 1.55 p.m. on the tower on N.E. bastion of Bombay Castle, and dropped at 2 h. 0 m. 0 s. p.m. India standard mean time, equal to 20 h. 30 m. 0 s. Greenwich mean time.

(b) A ball is hoisted at 8 h. 25 m. 0 s. a.m. on the clock tower of Prince and Victoria Docks, and dropped at 8 h. 30 m. 0 s. a.m. India standard mean time, equal to 15 h. 0 m. 0 s. Greenwich mean time.

(c) A clock in the dome of the tower, on N.E. bastion, beats by electricity in unison with the clock at Kolaba Observatory, and indicates India standard mean time.

Pilotage.—In and out of the harbour, for sailing vessels and steamers from 100 tons upwards, during the fair season and the S.W. monsoon (the S.W. monsoon commences from June 1 and ends September 30):—

Pilotage on Merchant Vessels for Net Registered Tonnage.			Steamers.		Sailing Vessels.	
			Fair Season.	Monsoon Season.	Fair Season.	Monsoon Season.
			Rs.	Rs.	Rs.	Rs.
From 100 to 300 tons			25	37	41	62
Over 300 „ 400 „			27	40	45	66
„ 400 „ 500 „			30	42	49	70
„ 500 „ 600 „			32	45	54	74
„ 600 „ 700 „			35	47	58	78
„ 700 „ 800 „			37	49	62	82
„ 800 „ 900 „			40	52	66	87
„ 900 „ 1,000 „			42	54	70	91
„ 1,000 „ 1,100 „			45	57	74	95
„ 1,100 „ 1,200 „			47	59	78	99
„ 1,200 „ 1,300 „			49	62	82	103
„ 1,300 „ 1,400 „			52	64	87	107
„ 1,400 „ 1,500 „			54	67	91	111
„ 1,500 „ 1,600 „			57	69	95	115
„ 1,600 „ 1,700 „			59	72	99	120
„ 1,700 „ 1,800 „			62	74	103	124
„ 1,800 „ 1,900 „			64	77	107	128
„ 1,900 „ 2,000 „			67	79	111	132
„ 2,000 „ 2,100 „			69	82	115	136
„ 2,100 „ 2,200 „			72	84	120	140

Harbour Pilotage.—

Vessels under 1,000 tons.	Rs. 20
„ of 1,000 to 1,500 tons.	„ 25
„ „ 1,500 tons and upwards	„ 30

India—Bombay (continued).**Towage :—**

	A Steam or Sailing Vessel.		
	Of 1,500 tons register and under.	Exceeding 1,500 tons register.	General.
	Rs.	Rs.	Rs.
For assisting a vessel at the Dock entrance.	—	—	50
NOTE.—If the Tug attends at the dock entrance but is not used, or, after raising steam specially, is informed that her services are not required, the above charge will be reduced to	—	—	30
For towing a vessel through the dock channel to or from a berth north of Cross Island	75	100	—
For towing from the docks to anchorage south of Cross Island or vice versa	100	150	—
For towing from dock or stream to Sunk Rock or vice versa	150	200	—
For towing from dock or stream to the Bombay Floating Light or vice versa	200	250	—
For detention of tug by reason of vessel not being ready or other cause, for every half hour (in addition to the usual towage)	—	—	25
For tug is ordered to tow a vessel and, after going alongside, is sent back immediately, or after raising steam specially is informed that her services are not required	—	—	50
For re-mooring a vessel which has dragged her anchors	—	—	100
For hire of tug's hawser	—	—	15
For sending a vessel on fire for first 24 hours or any part thereof	—	—	150
For sending a vessel on fire second 24 hours or any part thereof	—	—	120

Transporting Fees.—For steamers using their own engines, from one berth to another south of Cross Island, or to or from any of the docks or to any berth north of Cross Island, or vice versa, 20 Rs. ; transporting north of Cross Island, 15 Rs. Sailing ships or steamers towed to or from any dock north of Cross Island from or to fixed moorings north of Cross Island, 15 Rs. A steamer towed is charged at sailing ship rates.

Port Charges.—Port Dues :—1 anna per ton burden ; vessels in ballast, $\frac{3}{4}$ anna per ton. **Dry Dock Charges :—**For the first 24 hours, the tonnage being the gross registered tonnage of the vessel ; when more than one vessel is docked at the same time, the aggregate gross tonnage of the vessels docked :—

	Rs.	a.
Not exceeding 1,000 tons	400	0 minimum.
Exceeding 1,000 but not exceeding 1,050 tons	426	9 "
" 1,200 " " 1,250 "	507	13 "
" 1,400 " " 1,450 "	589	1 "
" 1,600 " " 1,650 "	670	5 "
" 1,800 " " 1,850 "	751	9 "
" 2,000 " " 2,050 "	818	12 "
" 2,200 " " 2,250 "	843	12 "
" 2,400 " " 2,450 "	868	12 "
" 2,600 " " 2,650 "	893	12 "
" 2,800 " " 2,850 "	918	12 "
" 3,000 " " 3,050 "	942	8 "
" 3,200 " " 3,250 "	962	8 "
" 3,400 " " 3,450 "	982	8 "
" 3,600 " " 3,650 "	1,002	8 "
" 3,800 " " 3,850 "	1,022	8 "
" 4,000 " " 4,050 "	1,042	8 "

India—Bombay (*continued*).

					Rs.	a.	
Exceeding 4,200 but not exceeding	4,250 tons	.	.	.	1,062	8	minimum.
"	4,400	"	"	"	1,082	8	"
"	4,600	"	"	"	1,102	8	"
"	4,800	"	"	"	1,122	8	"
"	5,000	"	"	"	1,142	8	"
"	5,200	"	"	"	1,162	8	"
"	5,400	"	"	"	1,182	8	"
"	5,600	"	"	"	1,202	8	"
"	5,800	"	"	"	1,222	8	"
"	6,000	"	"	"	1,242	8	"
"	6,200	"	"	"	1,262	8	"
"	6,400	"	"	"	1,282	8	"
"	6,600	"	"	"	1,302	8	"
"	6,800	"	"	"	1,322	8	"
"	6,950	"	"	"	1,337	8	"

This scale increases by 50 tons at a time with intermediate prices.

For every succeeding 24 hours or part thereof, 200 Rs.

NOTE.—The period of 24 hours counts from the time the entrance caisson is placed in position after the vessel has entered. The period of occupation ends when the vessel has cleared the dock entrance when leaving.

PROVISO.—If the dock is required for another vessel, a vessel that has already occupied it for 72 hours must immediately vacate or pay a fresh fee, calculated according to the tonnage on her gross tonnage for the first 24 hours, for every 24 hours or part thereof that she remains in occupation.

Night Work.—For docking or undocking between the hours of 6 p.m. and 6.30 a.m. an extra charge of 100 Rs. will be made. **Sundays and Holidays:**—For docking or undocking at any time between 6.30 a.m. and 6.30 p.m. on Sundays or authorized holidays, an extra fee of 100 Rs., plus actual expenses, will be charged.

NOTE.—In cases of genuine emergency, such as a vessel being in danger, the extra fees for docking on Sundays and holidays are not leviable.

When work on scraping, painting, or repairs is actually done on vessels in dock on Sundays or holidays, the usual charge will be made according to the period of occupation; otherwise Sundays and authorized holidays will be allowed free.

A vessel engaging the dock and not using it will be charged 300 Rs.

Dock Dues.—Vessels using the docks are charged 1 pie per ton per day (minimum, 25 Rs.) for every day or part of a day. Vessels occupying berths at the outside or harbour face of the dock wall are charged the same dues as charged to vessels using the docks, provided that if a vessel at such berths lands or embarks passengers only the charge is 15 Rs. for every day or part thereof. Vessels will not be charged for Sundays, or the holidays enumerated in bye-law, when no work is done. A vessel lying in dock with cargo, waiting for charter or cargo, and not working, shall nevertheless be charged full dock dues for the time she so lies idle. The day that a vessel enters and the day she leaves the dock shall be counted as one day.

Charges for Vessels Entering the Wet Docks for Repairs.—For vessels 250 ft. long and under, 12 Rs. per day. For vessels over 250 ft. in length, 18 Rs. per day. **Night and Holiday Work at Wet Docks:**—30 Rs. per night from 7.30 p.m. (Indian standard time) to 3.30 a.m. (Indian standard time). 15 Rs. per half night, from 7.30 p.m. to midnight. When gates are open for receiving and delivering cargo, 15 Rs. per night, from 7.30 p.m. to 3.30 a.m., and 7½ Rs. per half night, from 7.30 p.m. to midnight, or from midnight to 3.30 a.m., to be paid by each ship receiving goods through a dock after working hours, except in the case of State Railway materials, the charge for which will be 3 Rs. per night and 1½ Rs. per half night.

India—Bombay (*continued*).

Crane Charges.—Vessels will be charged for the use of the Trustees' cranes as follows :—For each $1\frac{1}{2}$ -ton crane per day or per night, 5 Rs. ; for each $1\frac{1}{2}$ -ton crane per half-day or half-night, $2\frac{1}{2}$ Rs. Any part of a day or night less than half will be charged as a half-day or half-night.

Fresh water is supplied by the port authorities from their steam tank vessels at 1 R. 12 a. per ton of 250 gallons.

Other supplies of all kinds obtainable in Bombay.

KARACHI.

Karachi, or Kurrachee, in lat. $24^{\circ}49'$ N., long. $67^{\circ}1'$ E., is situated near the base of the southern extremity of the Pabb Mountains, and serves as the port of Sindh and the Punjab. Distance from Liverpool by sea via the Cape, 10,580 miles ; via the Suez Canal, 6,037 miles.

Population.—116,663.

Imports.—Metals, sugar, kerosene, hardware, spices, wines, cottons, silks, twist, yarn, railway material, and coal.

Exports.—Saltpetre, salt, rice, wheat, and other grains, ghee, hides, oil, oil seeds, salt fish, bark for tanning, raw and manufactured silk, wool, madder, alkalies, indigo, and cotton, also horses and camels from Afghanistan and the adjoining countries.

Accommodation.—The port area consists of all the water contained in the space between the extreme end of Manora Point to the end of the Breakwater, and from it in a line due east to the shore at Ghizri, and hence by high water mark up the Chinni Creek and round the head of all the Creeks in the eastern, northern, and western parts of the harbour by Baba Point, and along the shore of Manora Spit to Manora Point. There is a depth of $32\frac{1}{2}$ ft. in the entrance channel at high water spring tides and 10 ft. at neaps. It is high water, full and change at 10.30 ; average rise and fall, spring tides, 7 ft. 4 in. ; neap tides, 3 ft. 8 in. The tides during the springs are strong ; the flood sets to the S.E. and the ebb to the N.W. During spring tides vessels with a draught of 28 ft. (or more at the discretion of the port officer) can enter and leave the harbour. Sailing vessels should enter the port on the ebb tide. Steamers can enter either flood or ebb at the pilot's discretion. Masters of ships should not on any account attempt to enter the harbour without a pilot. On the arrival of ships the height of the tide is signalled from a semaphore on the lighthouse balcony on Manora Point.

There is a breakwater running out from Manora Point in a S. by E. direction to a distance of 1,500 ft. into 5 fathoms of water. A white occulting light visible about 10 miles is shown from the end of this breakwater, with a depth of about 24 ft. alongside. This breakwater affords complete shelter to the entrance channel during the S.W. monsoon. A channel 1,685 ft. wide has been opened through the bar, with a depth of 24 ft. low water springs. This entrance is marked by buoys in accordance with the universal system of buoyage, the outer port (black) buoy being lit by coal gas, and the outer starboard (red) buoy by acetylene gas. A jetty 1,400 ft. in length affords good accommodation for lighters and country craft, near the native town and commercial quarter. There is also a boat wharf to accommodate country craft. A ship wharf to accommodate fifteen steamers of the largest

India—Karachi (*continued*).

class has been constructed. There are twelve piers and wharves, with total quayage of 8,573 ft., with low water depth alongside of from 26 to 28 ft. for about 5,000 ft.; the remainder having from 4 to 13 ft. alongside at low tide. There is one 30-ton and two 12-ton hydraulic cranes; six 35-cwt. cranes; and sixteen hand cranes to lift from 1 to 6 tons.

There is a lighthouse on Manora Point. The light is a white one, elevated 148 ft. above the level of the sea, and should be visible in clear weather to a distance of 20 miles. The coast of Sindh should be approached with great caution; too much attention cannot be paid to the lead, more especially in passing the banks of the Indus, which are extending considerably to seaward.

Masters should endeavour to make the port at daylight, and can with safety approach into 8 fathoms at about 2 miles distance from the lighthouse keeping it on any bearing from N.E. to N.N.E., and heave-to for a pilot. A mail steamer arriving off the port at night should burn two blue lights in quick succession; other vessels one or two at intervals of 5 minutes, which will be answered by a blue light, meaning "sending out a pilot," but should no pilot be available, or should he be unable to board owing to bad weather, pyrotechnic light will be burnt at the signal station. In picking up a pilot no vessel should run down to the eastward further than to bring the light house to bear north. The pilot boat is a stream lifeboat. There is a dry dock at Manora 261 ft. long over all, 50 ft. wide at the entrance at the high spring level, and 12½ ft. on the sill at high springs. There is a small slip for steam launches at Manora also. Ordinary repairs to hull and machinery can be undertaken.

From June to the middle of September ships should not on any account anchor, but stand off and on, keeping the lighthouse bearing from N.N.E. to N.E.—1 to 2 miles distance—until boarded by a pilot, or directed by signal. From the middle of September to end of March the anchorage is with the lighthouse N. by E. to N.N.E.; distance 1 mile, in 7 fathoms. During April and May the anchorage is with the lighthouse N.N.E. to N.E. distance 1½ miles, in 8 fathoms.

Supplies of all kinds may be obtained. Turtle are found on the beach north of Manora; game is plentiful in the neighbourhood and can be bought at reasonable prices. All ships' materials are dear.

Time Signals.—Chronometers can be checked. A ball is hoisted on a beacon on Baba Island 5 minutes before the signal. The ball is dropped at 2 h. 0 m. 0 s. p.m. India standard time, equal to 20 h. 30 m. 0 s. Greenwich mean time, and 0 h. 57 m. 51 s. local mean time.

Pilotage.—In and out of the port, on sailing vessels and steamer. The monsoon season commences May 15 and ends September 30.

		Fair season.		Monsoon.	
		Rs.		Rs. a.	
From 100	to 300 tons	35		52	8
" 300½	" 400 "	39		56	8
" 400½	" 500 "	43		60	8

And 4 Rs. extra for every additional 100 tons.

Sailing vessels when towed in or out pay half pilotage. Extra charge for pilotage on Sunday or holidays, or between sunset and sunrise, 15 Rs.

Removing from one part of the port to another, 50 Rs. Removing from one mooring to another at the request of the agent or master, 50 Rs.

India—Karachi (*continued*).

Attendance of a pilot, ship being found on his going on board unprepared to proceed on the day named, 20 Rs.

Mooring.—Per day or part of a day:—

	Swinging.	Fixed.
	Rs.	Rs.
Vessels of 200 tons and under	2	3
„ from 200 $\frac{1}{2}$ to 500 tons	3	4
„ „ 500 $\frac{1}{2}$ „ 800 „	4	5
„ „ 800 $\frac{1}{2}$ „ 1,000 „	5	6
„ „ 1,000 $\frac{1}{2}$ „ 1,200 „	6	7
„ „ 1,200 $\frac{1}{2}$ „ 1,400 „	7	8
„ „ 1,400 $\frac{1}{2}$ „ 1,600 „	8	9
„ „ 1,600 $\frac{1}{2}$ „ 1,800 „	9	10
„ „ 1,800 $\frac{1}{2}$ „ 2,000 „	10	11
„ „ 2,000 $\frac{1}{2}$ „ 2,200 „	11	12
„ „ 2,200 $\frac{1}{2}$ „ 2,400 „	12	13
„ „ 2,400 $\frac{1}{2}$ „ 2,600 „	13	14
„ „ 2,600 $\frac{1}{2}$ „ 2,800 „	14	15
„ „ 2,800 $\frac{1}{2}$ „ 3,000 „	15	16
For every 200 tons or fraction thereof in addition	1	1

Port Charges.—Port Dues :—3 annas per reg. ton, payable every 3 months. Vessels entering in ballast without passengers pay 2 annas and 3 pies per reg. ton ; vessels neither loading nor discharging (excepting such transshipment as may be necessary to effect repairs) pay 1 anna and 6 pies.

Towage :—Optional with masters to employ the Harbour Trust steam-tug at following rates : Into or out of port, 3 annas per reg. ton. Movement within the harbour (2 hour minimum), 50 Rs. ; for each succeeding hour or part of an hour, 10 Rs. Hire of mooring boat, 25 Rs. ; hire of warp boat, with or without anchors, 20 Rs. Hawasers, anchors, chains, etc., may be hired on terms fixed by the Conservator of the Port.

Boat Slip :—Per day or part of a day, 10 Rs. **Picking up and Creeping for Anchors :—**Per day of 12 hours, or for a period of not less than 6 hours, 75 Rs. ; less than 6 hours, 50 Rs.

Labour :—1 R. per man per day. **Water :—**Charges for supplying shipping in the stream, 225 gallons, 1 R. 8 annas ; at the pier or wharf, 1 R.

Ballast Permits :— $\frac{1}{2}$ anna per net reg. ton. **Brokerage :—**4 annas per ton ; commission on inward freight, 2 $\frac{1}{2}$ per cent. ; outward, 5 per cent. ; disbursements, 2 $\frac{1}{2}$ per cent.

Pro Forma Charges on a steamer of 3,000 net reg. tons, with a cargo of 7,500 tons, with coal in and wheat out, drawing 25.6 ft. loaded :—

	Rs.	a.
Harbour dues at 3 annas per registered ton, charged once in 3 months	562	8
Pilotage in fair season	143	0
Agency commission, if commission on freight does not exceed this figure	300	0
Discharging tons 7,500, at 3 annas per ton	1,406	4
Tallying tons 7,500, at 6 pies per ton (average)	234	6
Cranes, say, four cranes working 6 days and nights	288	0
Night work fees (Port Trust and Customs) for 6 nights	300	0
Berth fees for 6 days	120	0
Dubash attendance	50	0
Medical attendance (without medicine)	30	0
Surveyor's fee	32	0
Pilotage out	143	0
Loading tons 7,500, at 3 annas per ton	1,406	4
Tallying tons 7,500, at 6 pies per ton (average)	234	6
Cranes, say, six cranes working 4 days and nights	288	0

Carried forward . . . 5,537 12

India—Karachi (*continued*).

	Rs.	a.
Brought forward	5,537	12
Night work fees (Port Trust and Customs) for 4 nights	200	0
Berth fee for 4 days	80	0
Sundry expenses (dunnage mats, sticks, winchmen, etc.)	400	0
Messengers to agents, and Customs for entering and clearing	2	12
Guarantee form and stamps for clearing	0	10
Gharri hire, say ten journeys	30	0
	6,251	2
	= £416 14s. 10d.	

Pro Forma Charges on a steamer of 2,500 tons net reg., mixed general cargo, 6,250 tons in and ballast out, drawing 25 ft. :—

	Rs.	a.
Harbour dues at 3 annas per ton reg., charged once in 3 months	468	12
Pilotage in and out, fair season	246	0
Agency commission	300	0
Discharging tons 6,250, at 3 annas per ton (without lifts)	1,171	14
Tallying tons 6,250, at 1 anna per ton	390	10
Cranes, say, four cranes working 6 days and nights (without heavy lifts)	288	0
Night work fees (Port Trust and Customs) for 6 nights	300	0
Berth fees, say, for 6 days	120	0
Dubash attendance	50	0
Medical attendance (without medicine)	30	0
Surveyor's fees	15	0
Messengers to agents and Customs, for entering and clearing	2	12
Guarantee forms and stamps for clearing	0	10
Gharri (carriage) hire, say ten journeys	30	0
	3,413	10
	= £227 11s. 6d.	

Pro Forma Charges on a steamer of 3,000 net reg. tons, ballast in, with a cargo of 7,500 tons of wheat out, drawing 25·6 ft. loaded :—

	Rs.	a.
Harbour dues at 3 annas per registered ton charged once in 3 months	562	8
Pilotage in and out, fair season	286	0
Agency commission, if commission on freight does not exceed this figure	300	0
Loading tons 7,500, at 3 annas per ton	1,406	4
Tallying tons 7,500, at 6 pies per ton (average)	234	6
Cranes, say, six cranes working 4 days and 2 nights	288	0
Night work fees (Port Trust and Customs) for 4 nights	200	0
Berth fees, say, for 4 days	80	0
Dubash attendance	50	0
Medical attendance (without medicines)	30	0
Messengers to agents and Customs, for entering and clearing	2	12
Guarantee form and stamps for clearing	10	
Gharri (carriage) hire, say ten journeys	30	0
	3,470	8
	= £231 7s. 6d.	

MANDAVEE.

Mandavee, in lat. 22°51' N., long. 69°28' E., stands on the N. side of the Gulf of Kutch.

Population.—36,000.

Imports.—European goods, thread, cocoa, seeds, gold, iron, copper, cloth, etc.

Exports.—Cotton, wool, clay, marble, and castor oil seed.

Accommodation.—In fine weather vessels of 9 ft. draught can enter the river and reach the wharves at the town. Vessels drawing 12 ft.

India—Mandavee (*continued*).

can reach the Albert Edward breakwater at high water, and those drawing more than 12 ft. anchor in the open roadstead, in 3 to 5 fathoms, bottom of clay mud, about 2 miles off.

Port Charges.—Port Dues:—On every arrival from Bombay, 5 Rs. 9 a., and from Karachi, 3 Rs. 3 a. European goods are brought here from Bombay.

SURAT.

Surat, in lat. $21^{\circ}10'$ N., long. $72^{\circ}50'$ E., is situated on the left bank of the River Tapti, about 19 miles from the bar.

Population.—About 119,300.

Imports.—Sugar, timber, coal, etc.

Exports.—Cotton, cotton seeds, cashmere shawls, oil cake, grain, rice, etc.

Accommodation.—There is accommodation for vessels of about 80 tons, and large vessels anchor off the mouth of the river in 7 to 8 fathoms. The anchorage is exposed, but the holding ground is good, stiff clay bottom. Spring tides rise 19 ft.; neaps, 12 ft. There is a light at the bar called the Tapti or Hajira light, which can be seen about 16 miles. The river is buoyed. It is most dangerous during the months of April and May.

Pilotage.—Nil.

Port Charges.—3 a. per ton. **Light Dues.**—See Madras. **Labour:**—Half a rupee per man.

The commerce is almost entirely confined to Bombay, Muscat, Kutch, Mandavee, etc.

BURMA.

Weights and Measures.—The weights and measures of Burma are chiefly those of British India, and the British Imperial yard, foot, and inch. The old native measures are, however, also used, and are as follows:—

4 taim	= 22 in.		
2 la-moo	= 1 lamyek	= 1 gill,	British Imperial value.
2 lamyeks	= 1 lamay	= 2 gills	" "
2 lamays	= 1 tsalay	= 1 pint	" "
4 tsalays	= 1 pyee	= 2 quarts	" "
2 pyees	= 1 sah	= 1 gallon	" "
2 sahs	= 1 saik	= 1 peck	" "
2 saiks	= 1 kwai	= $\frac{1}{2}$ bushel	" "
2 kwais	= 1 ten or teng	= 1 bushel	" "
100 tens or tengs	= 1 coyan	= $12\frac{1}{2}$ quarters	" "

AKYAB.

Akyab, in lat. $20^{\circ}8'$ N., long. $92^{\circ}55'$ E., on the Arakan River, is a large and important rice port.

Population.—35,680.

Export.—Rice.

Accommodation.—The least depth in the fairway from the sea to Akyab is 21 ft. at low water springs on the inner bar, N.E. of Fakir Point. A vessel of 26 ft. draught has entered the port. There is a lighthouse on

India—Akyab (*continued*).

Savage Island on the eastern side of the entrance, lat. $20^{\circ}5'$ N., long. $92^{\circ}56'$ E.

Caution.—The flood tide sets eastward on to White Rocks, and the ebb to the westward in the entrance. A steamer should not attempt to enter the harbour at night without a pilot.

Tides.—It is high water full and change at 9 h. 37 m.; the mean range of greatest ordinary spring tides is 8 ft. 3 in. The tides rise and fall quickly, slack water lasting 3 hours at neaps.

The rainy season commences about the end of May and lasts to about the end of September; average rainfall, 190 in.

There is 660 ft. of iron wharfage with a T head 204 ft. long. The wharf cannot be reached by vessels of over 21 ft. draught. Two cranes to lift 3 tons each. There are two piers for lighters belonging to the port authorities. Anchorage in the port is in 30 ft. of water at low springs on soft mud. Repairs can be executed. There is a slip for launches up to 80 tons.

Vessels are loaded in the stream, and all cargo is carried by means of lighters.

Pilotage.—Not compulsory. Pilots come outside the outer bar on being signalled for.

RATES DURING N.E. MONSOON.

	Rs.	a.
Up to 14 ft.	32	0
" 15 "	45	0
" 16 "	48	0
" 17 "	68	0
" 18 "	72	0
" 19 "	95	0
" 20 "	120	0

For every foot in addition 16 Rs.

RATES DURING S.W. MONSOON (May 1 to October 31).**Outwards.**

	Rs.	a.
Up to 14 ft.	56	0
" 15 "	78	12
" 16 "	84	0
" 17 "	119	0
" 18 "	126	0
" 19 "	166	4
" 20 "	210	0

For every foot in addition 28 Rs.

Inwards.

	Rs.	a.
Up to 14 ft.	64	0
" 15 "	90	0
" 16 "	96	0
" 17 "	136	0
" 18 "	144	0
" 19 "	190	0
" 20 "	240	0

For every foot in addition 32 Rs.

Port Charges.—**Port Dues** :—4 annas per ton. **Coast Light Dues** :— $1\frac{1}{2}$ annas per ton. **Coolie Labour** :—8 annas to 1 rupee each per day according to the season. **Water** :—Fresh water, 4 rupees per ton. **Provisions** :—Fish, fresh beef, and vegetables are cheap, but salt provisions, biscuits, and ships' stores can only be obtained from Calcutta or Rangoon.

Pro Forma Charges on a steamer of 2,485 tons net reg. :—

India—Akyab (*continued*).

	Rs.	a.	p.
Inward pilotage	72	0	0
Port dues	621	4	0
Coast light dues	232	15	6
Great and Little Basses and Minicoy light dues	38	13	3
Stevedore's bill	2,694	12	6
Provisions bill	696	2	0
Doctor's fee	50	0	0
Outward pilotage	224	0	0
	4,591	2	3 = £306 1s. 6d.

BASSEIN.

Bassein is in lat. $16^{\circ}45'$ N., long. $94^{\circ}48'$ E.

Population.—35,000.

Export.—Rice.

Accommodation.—The port is easy of access, and vessels drawing 6 ft. can enter. There are eleven rice mills here, and steamers are brought alongside the mill wharves in 30 ft. of water and are loaded direct from the b-downs without the help of lighters. Vessels should approach Diamond Island (at the mouth of the river) from the westward, giving the island a berth of at least a mile to clear the outlying reefs.

Vessels can anchor anywhere on the west of the island at a distance of a mile to the north of it, but they should keep clear of Baroni Rock. Vessels can approach from the eastward, but great care is necessary on account of the strong tides, outlying reefs, and shoals, which are, however, all marked in the Admiralty Chart.

Only small repairs can be undertaken.

Communication.—There is regular communication three times a week with Rangoon by steamers of the Irrawaddy Flotilla Company, the passage taking about 30 hours; and by railway, two trains a day, taking about 18 hours.

There are hospitals for Europeans and natives, and a medical officer who visits vessels.

The rice shipped to European markets is known as Bassein five parts cargo rice. No white rice is shipped. There are nine rice mills.

Ships chartered to load in Bassein have usually 10 to 15 lay days, according to their size. Six days are, however, sufficient to load a steamer of 1,000 tons during the dry season, and eight during the wet season.

The first of the new grain is brought to the market in January, but the mills seldom commence working till the beginning of February and continue till the end of September; but the bulk of the crop is generally shipped by the end of May.

Coal.—A small supply is kept by the Irrawaddy Flotilla Company and by the railway company for their own use, but any quantity can be obtained from Rangoon by rail or boat through the creeks.

Port Rules.—1. No vessel of above 200 tons shall enter within the limits of the port, or move from one place to another within the port between sunset and sunrise, without the special permission of the master attendant.

2. The commanders of all vessels arriving are desired to enter correctly in the columns of the report book of the port officer, as soon as presented to them, the information therein required regarding their vessels. They will also report, in writing, to the port officer the particulars noted in the form appended thereto.

India—Bassein (*continued*).

3. All commanders of vessels arriving shall anchor in such a position as the port officer shall direct. All vessels shall moor with two bower anchors each way, and shall not move from their position without a pilot, except with the express permission of the same authority.

4. Every ship or vessel within the port shall have removed any anchor or spar, or other substance projecting from her side, when required by any officer of the port.

5. The commanders of all vessels entering with ballast on board, shall, without delay, send to the port officer a report, in writing, stating the description of the ballast in hand, the quantity in tons, and the port of shipment. Application must be made by the commander to the port officer for permission to tranship or land ballast, and no ballast shall be transhipped or landed except under the sanction of the port officer, and only at such stations as he shall direct.

6. A free channel is to be kept for ships moving up and down the river, within the port, and always free passages to piers, jetties, landing places, wharves, quays, docks, and moorings; and all vessels shall be bound to move when required to clear such channels or passages.

7. All vessels within the port shall be moored or warped from place to place as required by the port officer, or other officer of the port, and no vessel shall cast off a warp that has been made fast to her to assist a vessel in mooring without being required so to do by the pilot or officer in the vessel mooring.

8. No vessel within the limits of the port shall boil any pitch or dammar on board, or shall draw off spirits by candle or other artificial lights.

Pilotage.—

PILOTAGE RATES FOR ALL VESSELS FROM DIAMOND ISLAND TO TOWN, AND

VICE VERSA :—

Inward Pilotage.

Draught of Water.	Ordinary Pilotage from November 1 to April 30.			Additional Monsoon Rate from May 1 to October 31.			Total Pilotage from May 1 to October 31.		
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Up to 7 feet	59	8	0	14	14	0	74	6	0
Over 7 up to 8 feet	68	0	0	17	0	0	85	0	0
" 8 " 9 "	76	8	0	19	2	0	95	10	0
" 9 " 10 "	85	0	0	21	4	0	106	4	0
" 10 " 11 "	121	0	0	30	4	0	151	4	0
" 11 " 12 "	132	0	0	33	0	0	165	0	0
" 12 " 13 "	143	0	0	35	12	0	178	12	0
" 13 " 14 "	154	0	0	38	8	0	192	8	0
" 14 " 15 "	202	8	0	50	10	0	253	2	0
" 15 " 16 "	216	0	0	54	0	0	270	0	0
" 16 " 17 "	229	8	0	57	6	0	286	14	0
" 17 " 18 "	243	0	0	60	12	0	303	12	0
" 18 " 19 "	304	0	0	76	0	0	380	0	0
" 19 " 20 "	320	0	0	80	0	0	400	0	0
" 20 " 21 "	420	0	0	105	0	0	525	0	0
" 21 " 22 "	440	0	0	110	0	0	550	0	0
" 22 " 23 "	460	0	0	115	0	0	575	0	0
" 23 " 24 "	480	0	0	120	0	0	600	0	0
" 24 " 25 "	500	0	0	125	0	0	625	0	0
" 25 " 26 "	520	0	0	130	0	0	650	0	0

India—Bassein (continued).*Outward Pilotage.*

Draught of Water.	Ordinary Pilotage from November 1 to April 30.			Additional Monsoon Rate from May 1 to October 31.			Total Pilotage from May 1 to October 31.		
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
up to 7 feet	59	8	0	19	13	4	79	5	4
over 7 up to 8 feet	68	0	0	22	10	8	90	10	8
.. 8 .. 9	76	8	0	25	8	0	102	0	0
.. 9 .. 10	85	0	0	28	5	4	113	5	4
.. 10 .. 11	121	0	0	40	5	4	161	5	4
.. 11 .. 12	132	0	0	44	0	0	176	0	0
.. 12 .. 13	143	0	0	47	10	8	190	10	8
.. 13 .. 14	154	0	0	51	5	4	205	5	4
.. 14 .. 15	202	8	0	67	8	0	270	0	0
.. 15 .. 16	216	0	0	72	0	0	288	0	0
.. 16 .. 17	229	8	0	76	8	0	306	0	0
.. 17 .. 18	263	4	0	87	12	0	351	0	0
.. 18 .. 19	327	12	0	109	4	0	437	0	0
.. 19 .. 20	345	0	0	115	0	0	460	0	0
.. 20 .. 21	462	0	0	154	0	0	616	0	0
.. 21 .. 22	484	0	0	161	5	4	645	5	4
.. 22 .. 23	506	0	0	168	10	8	674	10	8
.. 23 .. 24	528	0	0	176	0	0	704	0	0
.. 24 .. 25	550	0	0	183	5	4	733	5	4
.. 25 .. 26	572	0	0	190	10	8	762	10	8

Night fees, 32 Rs. ; mooring or unmooring, 16 Rs.

NOTE.—Inward rates.—From Sea to Dalhousie, one-third ; from Sea to Enterprise Island, two-thirds. Outward rates.—From Bassein to Enterprise Island, one-third : from Bassein to Dalhousie, two-thirds.

Harbour pilotage, 16 Rs. For each day's detention the masters are to pay the pilots 16 Rs., in addition to their regular pilotage.

Masters of vessels are requested to apply for pilots at the master attendant's office 48 hours before leaving.

Port Charges.—Port Dues :—4 annas per ton. **Discharging Ballast :**—1 rupee per ton (1 R. 8 a., including boat hire). **Mooring, Unmooring, or Moving Vessel :**—16 Rs. **Light Dues :**—Great and Little Basses, 2 pies per reg. ton ; Minicoy, 1 pie per reg. ton ; Burma coast, 2 a. 4 p. per ton. **Custom House Charges :**—For each officer required to work before and after working hours (8 a.m. to 5 p.m.)—From sunrise to 8 a.m. 1 R. ; from p.m. to sunset, 1 R. ; from sunset to midnight, 5 Rs. ; from midnight to sunrise, 5 Rs. ; Sundays and holidays, between 8 a.m. to 5 p.m., 5 Rs. ; vessels working timber and coal, for each night between sunset and sunrise, 5 Rs. For each application to enter or clear a vessel on Sundays or close holidays, the following fees are paid :—5 Rs. for each officer or clerk, and 1 R. for peon in attendance. **Bill of Health :**—Free. **Water :**—Water is difficult to obtain. **Provisions :**—Beef, 4 a. per lb. ; pork and mutton, 4 a. per lb. Provisions can be obtained, but vegetables are very scarce and dear.

Pro Forma Charges on a steamer of 1,964 tons reg. :—

	Rs.	a.	p.
Inward pilotage, 12 ft. 10 in.	143	0	0
Mooring	16	0	0
Night fees	32	0	0
Outward pilotage, 23 ft. 6 in.	528	0	0
Unmooring	16	0	0
Night fees	32	0	0

Carried forward 767 0 0

India—Bassein (*continued*).

	Rs.	a.	p.
Brought forward	767	0	0
Mooring and unmooring in port	32	0	0
Doctor's bill	50	0	0
Port dues	491	0	0
Burma coast light dues	286	6	8
Basses and Minicoy light dues	30	11	0
Preventive officer's bill	9	0	0
	Rs.	a.	p.
13,100 bamboos	393	0	0
12,460 billets of wood	373	9	7
7,825 mats	1,173	12	0
Stowing 4,000 tons cargo, at 5 a. per ton	1,250	0	0
Dubash's bill for provisions, etc.	279	8	0
	3,469	13	7
Less 10 per cent. discount	347	0	0
		3,122	13 7
2½ per cent. commission on advance		118	5 0
Address commission, 2½ per cent. on the estimated amount of freight, £137 9s. 11d.		2,300	10 3
		7,207	14 6 = £480 10s. 6d.

MAULMEIN.

Maulmein, in lat. 16°30' N., long. 97°42' E., is situated at the head of the channel or river on its eastern side, and near the S.E. entrance point of the Martaban or Salween River, 50 miles to the N. of Amherst.

Population.—70,000.

Imports.—Cotton goods, hardware, oil, cocoanuts, and provisions.

Exports.—Rice, timber, betel nuts, sapan wood, etc.

Accommodation.—A draught of 22 ft. may be considered a safe draught throughout practically the whole year. Steamers moor with their own anchors when lying up the river opposite the town, but lower down are moored to the port swinging moorings.

Small repairs to vessels and engines can be executed.

Marine stores can be purchased, but ships, as a rule, always come to the port supplied.

The limits of the navigable river and channels leading to the port of Maulmein are as follows :—

To the north, the port of Maulmein as above defined.

To the south, within the space bounded by the 16° of N. lat. as the southern limit, and north of that limit to the coast extending between 96° and 97°35' of E. long.

Port Regulations.—No vessel of above 200 tons shall enter within the limits of the port, or move from one place to another within the port, between sunset and sunrise, without the special permission of the master attendant. The commanders of all vessels arriving at Maulmein are desired to enter correctly, in the columns of the report-book of the master attendant, as soon as presented to them, the information therein required regarding their vessels.

Vessels about to leave the port must hoist the Blue Peter at the fore at least 24 hours before leaving.

All vessels within the port of Maulmein shall anchor, moor, and unmoor when and where required by the master attendant.

All vessels within the port of Maulmein shall be moored or warped from place to place as required by the master attendant; and no vessel shall cast off a warp that has been made fast to her to assist a vessel in mooring.

India—Maulmein (continued).

without being required so to do by the pilot or officer in charge of the vessel mooring.

No vessel shall use any of the Government chain moorings, whether fixed or swinging, without permission of the master attendant.

All vessels within the limits of the channels leading to the port shall, when at anchor between sunset and sunrise, have a good light hoisted at the starboard fore yard-arm; and all vessels under any weigh at night shall show a good light at the fore royal or upper foremast-head; and all vessels under weigh in tow of a steamer shall, in addition to the mast-head light, show a good light at each fore yard-arm; the steamer showing the light prescribed by the Admiralty regulations.

Pilotage.—Compulsory for vessels over 200 tons. Pilots are stationed at Amherst. The station is off Green Island. The best anchoring ground to wait for a pilot is with the south point of Green Island from E.S.E. or E.N.E., about 2 miles distant, and vessels are advised not to go to the northward of this without a pilot, as the holding ground is not good, and the combined tides of the Sittang and Salween Rivers are exceptionally strong, sometimes attaining a velocity of 7 knots an hour.

TABLE OF RATES OF PILOTAGE, CHARGEABLE ON ALL VESSELS DURING THE NORTH-EAST MONSOON (November 1 to April 30).

Draught of vessel.		Full pilotage in and out.	
		Rs.	
Below and up to 8 ft.		25	
8 ft. and up to 9 ft.		35	
9	10	45	
10	11	55	
11	12	65	
12	13	85	
13	14	105	
14	15	125	
15	16	145	
16	17	165	
17	18	200	
18	19	240	
19	20	300	
20	21	360	
21	22	420	
22	23	480	
23	24	540	
24	25	600	
25	26	660	

TABLE OF RATES OF PILOTAGE, CHARGEABLE ON ALL VESSELS DURING THE SOUTH-WEST MONSOON (May 1 to October 31).

Draught of vessel.		Full pilotage in and out.	
		Rs.	a.
Below and up to 8 ft.		29	0
8 ft. and up to 9		40	12
9	10	52	4
10	11	63	12
11	12	75	4
12	13	98	12
13	14	121	12
14	15	145	0
15	16	168	4
16	17	191	4
17	18	232	0
18	19	278	4
19	20	348	0
20	21	417	12
21	22	487	4
22	23	556	12
23	24	626	4
24	25	696	0
25	26	765	12

India—Maulmein (*continued*).

The pilotage distance is divided into fifths as follows, for charging broken or intermediate pilotage, and vessels piloted one of the following distances pay one-fifth of the above rates. The least sum payable to a pilot for taking a vessel from sea to inside the outer buoys, or from inside the outer buoys to sea, is 25 Rs.

From sea to New Channel, one-fifth.

From New Channel to anchorage in Balugyun Channel, one-fifth.

From anchorage in Balugyun Channel to Half-way Creek, one-fifth.

From Half-way Creek to Natmaw, one-fifth.

From Natmaw to Maulmein, one-fifth.

The charge for shifting a berth in the port will be 25 Rs. for a sailing vessel, and 15 Rs. for a steamer. Every movement of a vessel between her entry and clearance is to be considered a removal when the pilotage would be less than 25 Rs. for a sailing vessel, or 15 Rs. for a steamer. A steamer when not under steam is regarded as a sailing vessel. Pilots boarding vessels for orders outside Amherst will be entitled to 25 Rs. for bringing the vessel to a safe anchorage outside, and to a further sum of 15 Rs. demurrage for each day's detention on board afterwards, when such detention is at the master's request. Pilots who may, by force of circumstances, be carried off to sea, shall be entitled to recover all their expenses of return to Maulmein, in addition to compensation at the rate of 10 Rs. a day during the time of their absence from the pilot station. It is incumbent on the pilot to return by the first opportunity, and with all dispatch. Pilots who may keep vessels under weigh after dark, or who may get them under weigh before daylight, at the request of the master, shall be paid a fee of 32 Rs. in each case. Pilots who may moor or unmoor vessels after dark shall be paid a fee of 16 Rs. in each case, but not in addition to the fee mentioned in the foregoing section. In the event of the master of an inward-bound vessel who has flown the pilot signal declining, without sufficient cause, the services of the pilot boarding his vessel, the pilot shall be entitled to full pilotage. A pilot detained on board a vessel for more than 24 hours, shall be entitled to a sum of 15 Rs. for every day's or part of a day's further detention. Masters of vessels must apply for a pilot 24 hours before the time of sailing.

Port Charges.—Mooring :—10 Rs. per day for any sized vessel.

Boat Hire :—5 Rs. per 100 bags of 2 cwt. each, or 10 Rs. to 30 Rs. per boat per day, according to size.

Light Dues :—Basses and Minicoy light dues, 3 pies per reg. ton ; inward Burma light dues, 1 a. 2 pies ; outward Burma light dues, 1 a. 2 pies.

Labour :—Loading rice, 4 a. per ton ; timber, 12 a. per ton ; discharging general cargo, 6 a. per ton.

Drinking Water :—1 R. per 100 gallons. **Provisions :—**Beef is 5*d.* to 6*d.* per lb. ; pork, 6*d.* to 7*d.* ; poultry of all kinds rather dear for India, but considerably less than half the price in England. Vegetables and fruit are always obtainable, but the variety and quantity are dependent on the season of the year.

Pro Forma Charges on a steamer of 1,996 tons reg., ballast in, and rice out, drawing under 16 ft. loaded :—

	Rs.	a.	p.
Harbour dues at 4 annas per reg. ton	499	0	0
Pilotage in, 13 ft.	52	8	0
“ out, under 16 ft. and one more in harbour	87	8	0
Inward and outward Burma light dues	291	1	4
Basses and Minicoy light dues	31	3	0
Swinging moorings for 7 days at 10 Rs.	70	0	0

India—Maulmein (*continued*).

Amherst, in lat. 16°0' N., long. 97°38' E., is on a peninsula of the same name, situated near the mouth of the Maulmein River.

RANGOON.

Rangoon, the chief commercial port and town of Burma, is situated on the left bank of the Rangoon river, at a distance of 20 miles from the sea, in lat. 16°50' N., long. 96°15' E. Distance from Liverpool via the Suez Canal, 7,955 miles; via the Cape, 11,460 miles.

Population.—320,000.

Imports.—Provisions, liquors, hardware, and cutlery metals, machinery and mill-work, railway material, chemicals, drugs, medicines, narcotics, dyeing and tanning materials, oils, manufactures of cotton, silk, and wool; sugar, apparel, matches, salt, umbrellas, building materials, earthenware, coal, spices, stationery, cordage, and rope of vegetable fibre, manufactures of leather, tallow, tea, and coffee.

Exports.—Rice, rice-bran, hides and skins, raw cotton, mineral oils, grain and pulse, candles, seeds, cutch, jade-stone, tobacco, fodder, bran, oil-cake, stick-lac, spices, raw caoutchouc, provisions, horn and horn meal, precious stones and pearls, teak wood, and silk.

Accommodation.—The port is accessible to vessels of the largest tonnage. There is 21 ft. of water on the bar ("The Hastings") at neaps, and 30 ft. at springs. The navigation is rendered safe by a competent staff of European pilots.

There are twelve discharging wharves and jetties for sea-going steamers, besides two large floating pontoons for embarking and disembarking passengers. The water alongside these berths varies from 20 ft. to 28 ft. at low water. Eight of the discharging berths have been, or are being, fitted with hydraulic cranes. All the discharging berths are fitted with ample transit shed accommodation. There is also a bonded warehouse, and a general warehouse. A new general warehouse is under construction.

There are twenty-six swinging moorings in the port. The mooring accommodation is being added to by the provision of a number of fixed moorings. The depth of water at the moorings varies from 23 to 35 ft.

Steamers are coaled at the rate of 500 tons per day.

There is one 30-ton sheer legs.

Repairs.—Small defects to engines and boilers can be made good by local repairing firms. There is a patent slip to take a vessel of 200 tons, and a gridiron 230 ft. long, 45 ft. wide, and 13 ft. on the blocks at high springs.

The Rangoon River is an eastern branch of the Irrawaddy River, and is connected with it by the Panhlaing and Bassein Creeks. Rangoon is thus in a position to command the bulk of the trade which navigates the Irrawaddy River for more than 1,200 miles in the interior of the country. Rangoon is the terminus of the Burma Railways Company, and a branch line runs along the river front, rendering the transport of cargoes directly into the interior of the country, and the bringing of produce by rail direct to the wharves, a matter of convenience.

Time Signals.—Chronometers can be checked. A ball is hoisted on the tower of the Sailor's Home 5 minutes before the signal. The ball

India—Rangoon (*continued*).

is dropped at noon Burma standard mean time, equal to 17 h. 30 m. 0 s. Greenwich mean time, and 23 h. 54 m. 40 s. local mean time.

Pilotage.—Vessels in tow or steamers between outer station and any place above Elephant Point, up to 9 ft. draught, 20 Rs., plus 5 Rs. a foot up to 17 ft.; 17 to 18 ft., 70 Rs.; 18 to 19 ft., 80 Rs.; above 19 ft. an additional 30 Rs. per foot, making 340 Rs. for 28 ft.; an additional 40 Rs. per foot up to 30 ft., and 50 Rs. per foot up to 34 ft., which is 620 Rs. Between Elephant Point and anchorage, half fees. Vessels under sail or steamer towing vessel over 100 tons, one-third more. Removal from town to below Hastings, or vice versa, 16 Rs. if pilot does not remain in charge.

Harbour Charges:—Mooring and unmooring, 32 Rs.; docking and undocking, 64 Rs.

Towage:—5 annas per reg. ton up or down in ballast; loaded, 10 annas up and 12 annas down; if one way 7 annas in ballast, 15 annas loaded or ballast up, and loaded down; or vice versa, 1 R. 1 a.; loaded both ways 1 R. 6 a.

Port Charges.—**Port Dues:**—3 annas per ton. **River Due:**— $1\frac{1}{2}$ annas per ton of cargo. **Light Dues:**—3 annas per ton. **Harbour-master's Fees:**—In and out, 32 Rs. **Burma Coast Light Dues:**—1 anna 2 pies; Madras ditto, 7 pies; Straits ditto, to Singapore, 6 pies; beyond 1 anna. **Mooring Fees** or buoy line, 10 Rs. a day within harbour, 20 Rs. below Hastings. Steamers and sailing vessels of any size bringing general cargo must discharge at jetties. The charges are—under 1,000 tons net register, 35 Rs. a day; 1,000 to 2,000 tons, 40 Rs.; 2,000 to 3,000 tons, 45 Rs.; over 3,000 tons, 50 Rs. Steamers with passengers only, 10 Rs. a day. Using jetty for fixing machinery, masting, etc., 15 Rs. a day.

Provisions.—Water, about 3 Rs. per ton; European supplies at prices somewhat higher than home prices; beef, 5*d.* per lb.; fowls, 8*s.* per dozen; ducks, 12*s.* per dozen; bread, 12 lb. for 1*s.* 4*d.*; fish, 5*d.* per lb.; vegetables (country produce), varying small rates.

Pro Forma Charges on a steamer of 3,401 tons, net reg. :—

	Rs.	Rs.
Port dues, 3 annas per ton	637	11
Harbour-master's fees, including docking charges	64	0
Mooring fees	32	0
Wharfage (one day)	50	0
Fee for night work	15	0
Cranage fees	40	0
Inward pilotage (20 ft.)	110	0
Outward pilotage (16 ft.)	55	0
Pilotage night fees (inward and outward)	40	0

1,043 11 = £69 11*s.* 7*d.*

Pro Forma Charges on a steamer 5,064 tons net reg. :—

	Rs.	Rs.
Port dues, 3 annas per ton	949	8
Harbour-masters' fees, including docking	96	0
Mooring fees	70	0
Wharfage (7 days)	350	0
Fee for night work	180	0
Cranage fees	296	0
Inward pilotage (25 ft.)	250	0
Outward pilotage (25 ft.)	250	0
Pilot's removal fee (outward)	16	0

2,457 8 = £163 16*s.* 8*d.*

*India.***VERAWAL.**

Verawal, in lat. 20°53' N., long. 70°26' E., is in the State of Junāgarh, Kathiawar, Bombay.

Population.—16,775.

Import.—Coal.

Accommodation.—Steamers usually anchor about 2 miles from the town in about 8 fathoms of water. There is deep water nearer the town, but the anchorage is bad, the bottom being of bed-rock and soft mud, and is reliable only during the fair season, i.e., October to May. Cargo from steamers is brought to the beach in lighters and there landed, and then carried by coolies to the road above the beach, where a siding connects with the railway. Passengers are not allowed to land before sunrise or after sunset.

Pilotage.—Optional and not necessary. The charge is 10 rupees.

Port Charges.—Port Dues :—British Steam Navigation Co.'s steamers pay 5 rupees per steamer. Other steamers pay 3 annas per reg. ton for three months.

MADRAS.**WEIGHTS AND MEASURES.**

		Cub. in.	Depth and diameter.
8 ollacks = 1 padi	=	93.75	5.0308 in.
8 padi = 1 markal	=	750	10.0616 "
5 markal = 1 parah	=	3,750	17.2050 "

The garisha, or garce, for grain, 12½ mans, 320 lb. avoirdupois, equal 3½ British India mans.

MADRAS TONNAGE SCHEDULE.

	Cwt. per ton net.	Cubic ft. per ton.		Cwt. per ton net.	Cubic ft. per ton.
Aloes in bags	20	—	Cloves, in bags	8	—
„ boxes	20	—	„ „ chests	—	50
Alum	20	—	Coal	20	—
Aniseed	8	—	Cochineal	—	50
Arrowroot, in cases	—	50	Coffee, in bags	18	—
Assafoetida, in bags	20	—	„ „ robins and casks	16	—
„ boxes	20	—	„ „ cases	17	—
Apparel	—	50	Coir, yarn and fibre, screwed	—	—
Bark, in bags	8	—	„ bales	—	50
Barilla	20	—	Do., in bundles and dholls	10	—
Beeswax	20	—	Coriander seed	12	—
Betel-nut	18	—	Copra in bags	12	—
Books	—	50	„ „ each cup cut in	—	—
Borax or tincal	20	—	„ four pieces	14	—
„ „ in cases	—	50	Cotton, in bales	—	50
Brimstone	20	—	„ piece goods	—	50
Bullion	At per cent.	—	„ in yarn	—	50
Cake lac, in bags	16	—	Cowries	20	—
Camphor, in cases	—	50	Cutch, in bags	17	—
Cardamoms, in robins	8	—	Dates, wet	20	—
„ boxes	—	50	„ dry	16	—
„ bags	10	—	Dholl	20	—
Cassia, all sorts	—	50	Elephants' teeth, in bulk	16	—
Castor seeds	15	—	„ „ in cases	—	50
Chillies, in bags	12	—	Fennigarick seed	16	—
„ in robins	14	—	Furniture	—	50
China root, in bags	11	—	Garlic and onions	12	—
„ in boxes	—	50	Ginger, in bags or bales	12	—
Chiretta	—	50	„ cases	—	50
Cigars	—	50	Gingelly seed	17	—

MADRAS TONNAGE SCHEDULE—continued.

	Cwt. per ton net.	Cubic ft. per ton.		Cwt. per ton net.	Cubic ft. per ton.
Gram	20	—	Rhea, in bales	—	50
Ground-nuts, in shell	12	—	Rice, in bags	20	—
„ „ shelled	16	—	Roping, in coils	—	50
Gum, in cases, not enumerated	—	50	„ „ lines and twines, in bundles	14	—
Gunny bags	—	50	Do, „ coir, in coils	10	—
„ „ cloth	—	50	Rum, in casks	210	Imp. gals.
Gunjah	—	50	Safflower, in bales	—	50
Hemp, in bales	—	50	Sago, in cases	—	50
Hides	—	50	Sal ammoniac, in bags	15	—
Hoofs, horn shavings, and tips	20	—	„ „ cases	—	50
Horns, cow and buffalo	20	—	Saltpetre	20	—
„ deer	16	—	Salt	20	—
Indigo	—	50	Sapan wood	20	—
Jute, in bales	—	50	Sharks' pins	16	—
Lac dye	—	50	Sealing wax, in cases	—	50
Lard	—	50	Seed lac, in cases	—	50
Linseed	18	—	„ „ bags	16	—
Mace, in cases	—	50	Senna, in bales	—	50
Machinery	20	—	Sarsaparilla	—	50
Metals	20	—	Shells, rough in bags	20	—
Myrabolams	17	—	Shellac, in cases	—	50
Molasses	20	—	„ „ bags	16	—
Mother-of-pearl, in bags	20	—	Silk piece goods	—	50
„ „ chests	20	—	Skins	—	50
Munjeet	—	50	Soap, country, in cases	—	50
Mustard seed	18	—	„ „ bags	15	—
Niger seed	17	—	Soap, country, in bars	20	—
Nutmegs, in chests	—	50	Stick lac, in cases	—	50
Nux vomica, in bags or cases	16	—	„ „ in bags	16	—
Oats	12	—	Sugar, including Jaggery, in bags	20	—
Oil, in cases	20	—	Tallow, in cases or casks	20	—
„ casks	210	Imp. gals.	Talc	20	—
Olibanum	18	—	Tamarind, in cases or casks	20	—
Paddy, in bags	15	—	Tapioca	—	50
Peas	20	—	Tea, in chests	—	50
Palmyra fibre	—	50	Timber	—	50
Pepper, in bags	16	—	Tobacco, in bales	—	50
Planks and deals	—	50	Tortoise-shell, in chests	—	50
Poonac	20	—	Turmeric, in bags	14	—
Poppy seed	15	—	Wheat	20	—
Putchuck	10	—	Wool, in bales	—	50
Rape seed	18	—	All other articles not enumerated, in bales or cases	—	50
Raw silk, in bales	10	—			
Rattans	20	—			
Redwood, for dunnage	20	—			

The following articles are to be measured before shipment, at the press, go-down, or on the beach, at the option of the shipper, and the measurement is to be entered on the face of the bill of lading :—Coir (in bales), cotton, gunjah, hemp, jute, munjeet, Palmyra fibre, senna-leaf, wool, sarsaparilla. In measuring, the callipers are to take in the rope or iron hoop on the one side of the bale, and leave it out on the other. Half-inches are to be given and taken alternately. Ten bales per cent. as a maximum are to be measured—moiety to be chosen by the shipper and moiety by the ship; and in the event of any dispute arising, the bales are to be measured by a surveyor to be appointed by the Chamber of Commerce. The surveyor's decision is to be final, and his fee to be 5 Rs.—one-half to be borne by each party. All other goods to be measured at port of discharge.

Port Dues.—Payable by all vessels of 15 tons and upwards entering ports in the province of Madras.

India—Madras (*continued*).

Vessels chargeable.	Rate of Port Dues per ton.	How often chargeable in respect of the same vessel.
FOREIGN VESSELS.		
(a) A foreign ship or steamer, engaged in trade with the Straits Settlements, calling at any one port in the eastern or western group.	Two and a half annas.	The payment of the due at the port will exempt the ship or steamer for a period of sixty days from liability to pay the due again at that port.
(b) Any other foreign ship or steamer calling at any one port in the eastern or western group.	Two and a half annas.	The due is payable on each entry into the port.
(c) A foreign ship or steamer, engaged in trade with the Straits Settlements, calling at more than one port in the eastern or western group.	Three and a half annas.	The payment of the due at the first port called at in the group will exempt the ship or steamer for a period of sixty days from liability to pay the due again at that or any other port in the group.
(d) Any other foreign ship or steamer calling at more than one port in the eastern or western group.	Three and a half annas.	The due is payable once for the voyage.

Light Dues.—Coast light dues are levied on every vessel of 30 tons and upwards making voyages as described in the following schedule at the rates therein specified :—

Provided that, when coast-light dues have been paid in the case of any vessel on account of the lights in the eastern or western group, no further coast-light dues on account of lights in the same group shall be payable in respect of that vessel for a period of thirty days from the date on which such dues were paid.

SCHEDULE.

Vessels.	Rate per net Registered Ton.
1	2
CLASS I.	
Steam-vessels departing from any port in the Presidency of Bombay, or from any port on the west coast of the South of India, and bound for, or calling at, any port on the east coast of the South of India ; or vice versa.	7 pies on account of the western, and 7 pies on account of the eastern, group of coast-lights.
CLASS II.	
Steam vessels departing from any port in the Presidency of Bombay, or from any port on the west coast of the South of India, bound for, or calling at, any port in India, east of the eighty-sixth meridian of longitude E., and not calling at any port on the east coast of the South of India ; or vice versa.	7 pies on account of the western group of coast lights.
CLASS III.	
Steam vessels departing from any port in the Presidency of Bombay, or from any port on the west coast of the South of India, and bound for, or calling at, any port outside India east of the seventy-eighth meridian of longitude E. ; or vice versa.	7 pies on account of the western group of coast lights.
CLASS IV.	
Steam vessels calling at or departing from any port on the east coast of the South of India and not included in any other class.	7 pies on account of the eastern group of coast lights.
CLASS V.	
Steam vessels departing from any port in the Presidency of Bombay and bound for the port of Tellicherry or for any port in the Presidency of Madras north of the port of Tellicherry ; or vice versa.	5 pies on account of the western group of coast lights.

SCHEDULE *continued*—

Vessels.	Rate per net registered Ton.
1	2
<p>CLASS VI. Steam vessels, not included in any other class, departing from any port in the Presidency of Bombay and bound for, or calling at, any port on the west coast of the South of India south of the port of Tellicherry; or vice versa.</p>	7 pies on account of the western group of coast lights.
<p>CLASS VII. Steam vessels, not included in any other class, calling at more than one port on the west coast of the South of India, or at more than one port on the east coast of the South of India.</p>	7 pies on account of the western or eastern group of coast lights, as the case may be.
<p>CLASS VIII. Sailing vessels</p>	Half the rate which would be chargeable as aforesaid if they were steam vessels.

For the purposes of this Schedule, the expression "South of India" means any part of India south of a line drawn from Baidur on the west, to Ganjám on the east, coast of India, and the expression "Presidency of Bombay" does not include Aden.

ALLEPPI, OR ALLEPPEY.

Alleppi, or Alleppey, in lat. $9^{\circ}35' N.$, long. $76^{\circ}16' E.$, is in the dominion of the Maharajah of Travancore.

Population.—25,000.

Imports.—Salt, tobacco, piece goods, cotton, thread, iron, copper, coriander, gingelly, cummin seed, liquors, wheat, dholl, ghee, grain, camphor, sugar, etc.

Exports.—Copra, cocoanut oil, coir yarn, coir mats, coir matting, turmeric, cinnamon, flour, tea, pepper, arrowroot, croton seed, sardines, ginger, cotton, twist, hides, etc.

Accommodation.—The red and black buoys marking the roadstead at Alleppey have been replaced, and their positions are as follows:—Bearing red (northern), buoy from lighthouse, S. 81 W. Bearing black (southern), buoy from lighthouse, S. 56 W. Depth of water, $4\frac{1}{2}$ fathoms on mud. Ordinarily the proper anchorage will be between the buoys, but as the mud-bank shifts frequently, the depth of water given is not reliable, and so the lead has to be used when approaching the port. There is an iron pier 750 ft. long, provided with cranes capable of lifting up to 4 tons. Severe gales may be experienced in April, May, June, October, and November.

Canals run through the town, which join the backwater, and trade is carried on along the coast as far as Beypore.

Customs Regulations.—1. Commanders of ships are requested, on arrival, to deliver to the master attendant's office a complete manifest of all goods and merchandise on board their vessels, and to specify at what port they were received, to whom they belong, whether laden on account of their owners or on freight, together with the marks and numbers of the bales, packages, or boxes, etc.; a form of the above manifest will be furnished for their guidance on application. Previous to any ship or vessel

India—Alleppi, or Alleppey (*continued*).

having any transaction with the shore, the pass register and every other credential concerning the ship, must be delivered to the master attendant's office. If the ship be in ballast, it is to be reported accordingly.

2. Goods landed, or attempted to be landed, before the ship is regularly entered, or which have not been entered in the manifest, will be charged double duty. The same is applicable to goods exported under similar circumstances.

3. Application for port clearance must be made between 10 a.m. and 1 p.m. the day previous to sailing, to enable them to be granted by 4 o'clock, after which hour none will be given. Applicants for port clearances should furnish the Custom House with an export manifest of all cargo shipped on board their vessels from this port, specifying the names of the vessels and commanders, a description of the goods, marks and numbers, quantity or weight, shippers' and consignees' names, and the names of the port or ports bound to. Commanders of all European and native vessels, when applying for port clearance, shall declare at what intermediate ports (if any) they intend to touch before proceeding to the port of their destination.

4. Commanders of ships are strictly prohibited from throwing stone or shingle ballast overboard in the roads; boats for the purpose of landing the same will be supplied on application.

Port Charges.—Port Dues :—9 pies per ton. Vessels entering the port and leaving it within 7 days without discharging or taking in any cargo, or passengers, or in ballast, pay one-half the above rate. Vessels touching at and departing from the port within 48 hours without discharging or taking cargo are exempt from all port dues.

Boat Hire.—14 annas per ton. **Pier Toll :—**1 anna per 654 lb. **Water** may be obtained from a well on the beach. **Provisions :—**Good vegetables, fruit, fish, and live stock may be obtained (generally) in abundance.

ANJENGO.

Anjengo, a British possession in Travancore, is in lat. $8^{\circ}40'$ N., long. $76^{\circ}44'$ E., about 70 miles N.N.W. of Cape Comorin.

Exports.—Copra, dried fish, coir yarn, etc.

Accommodation.—The anchorage off Anjengo, under 10 fathoms, is foul, rocky ground, but outside of that depth the bottom is sand and shells; distance from the shore about a mile.

There are no port dues. Fresh water is obtainable, but provisions are scarce.

BEYPORE.

Beypore, or Beypoor, is in lat. $11^{\circ}17'$ N., long. $75^{\circ}49'$ E.

Accommodation.—The bar at the mouth of the river has only 6 ft. at ordinary low springs, when the rise is but $4\frac{1}{2}$ ft. Vessels anchor in 5 fathoms, mud bottom, about 2 to 3 miles off shore. During strong westerly winds there are heavy breakers on the bar, and ships at anchor in the roadstead should always be ready to put to sea on the approach of bad weather.

Loading and discharging is done by lighters and canoes.

Port Dues :—See Calicut.

BIMLIPATAM.

Bimlipatam is in lat. $17^{\circ}55'$ N., long. $83^{\circ}31'$ E.

India—Bimlipatam (*continued*).

Population.—About 10,000.

Imports.—Piece goods, cotton yarn, twist, metals, spices, European provisions, and liquors.

Exports.—Jaggery, gingelly seed, niger and rape seed, buffalo horns and hides, deer horns, turmeric, lac, indigo, jute, cotton, etc.

Accommodation.—The town stands at the foot of a small detached hill close to the sea, on the summit of which is a ruined house with a few straggling Palmyra trees. Half-way up, on its sea face, there is a large pagoda. The coast hereabouts is bold and safe to approach, there being no danger except the Santapilly Rocks, bearing from the town N.E. by E. $\frac{3}{4}$ E. (true) distance 16 miles. Vessels anchor in 6 to 7 fathoms and are discharged and loaded by surf boats.

In the case of a ship with any infectious disease on board, no communication is permitted with the shore unless authorized by the medical officer. A hospital has been established and is available for seamen. Ships subscribing 50 Rs. are entitled to the attendance of a medical officer during their stay by paying the boat hire; non-subscribing ships are charged 15 Rs. per visit, together with the boat hire. Loading and discharging is by Masulah, or surf boats, each carrying about 35 bags of grain = 2 Bengal maunds. A Bengal maund = 82 lb., a Madras maund = 25 lb. Cargo is shipped by the Bengal maund. Mats are cheap, but bamboo dunnage is very expensive.

Port Charges.—**Light Dues and Port Dues** :—See Calicut. **Water** :— $3\frac{1}{2}$ Rs. per 300 gallons. **Provisions** :—Bread, 2 annas per lb. Beef, 1 R. per 12 to 16 lbs. Sheep, 3 to $3\frac{1}{2}$ Rs. each. Pigs, 3 to 4 Rs. each. Fowls, 3 Rs. per dozen. Fish plentiful, good and cheap. **Masulah Boats** :—1 R. per trip. Sundays, holidays, and after 6 p.m., double hire. **Labour** :—7 annas per man per day.

Hospital Fees :—Seamen from subscribing ships, 1 R. per day; non-subscribing ships, 2 Rs. per day. **Lime Juice Certificate**, showing that there is a certain quantity on board of proper approved strength, 10s. **Bills of Lading** :—Government stamp, 4 annas for each copy.

Boat Hire.—

	A.	p.
Accommodation boat	2	4
Cargo boat	1	4
Water trip	3	8
Catamaran trip	0	4
Return trip extra	0	8

Double hire per trip on Sunday or holiday, and after 6 p.m.

Measuring Fees.—

	Rs.
100 tons and under 150 tons	15
151 " " 200 "	19
201 " " 250 "	23
251 " " 300 "	27
301 " and upwards	30

CALICUT.

Calicut, in lat. $11^{\circ}24'$ N., long. $75^{\circ}55'$ E., may be easily distinguished by the lighthouse, 52 ft. high, standing on the beach. It has a white occulting light, five occultations in every minute, thus serving to guide vessels to the anchorage, clear of the reef, which lies about 1 mile S. 30° W. from the light.

India—Calicut (*continued*).

Population.—77,000.

Imports.—General merchandise.

Exports.—Coffee, tea, oils, copra, coir, timber, ginger, turmeric, pepper, sandal-wood, and cardamoms.

Accommodation.—Calicut is an open roadstead and easy of access from August 15 to May 15, but during the remainder of the season communication is doubtful on account of the S.W. monsoon. The inner edge of the best anchorage is marked by a pillar buoy (white with black pillar) which marks the southern and eastern limits of the anchorage and where vessels are moored in 4 fathoms low water spring tides with the following bearings :—

Connolly's Hill bearing N. $36\frac{1}{2}^{\circ}$ E.

New lighthouse and pier head bearing N. 73° E. } Magnetic.

Old lighthouse bearing S. 89° E.

Vessels anchoring to the southward of this buoy should be careful not to bring it to bear to the westward of north, as there are dangerous patches of foul ground inside of that bearing. The shore may be approached with safety in the fine season to the north of the buoy, or inside of it in a line with the pier end on, but on no account should vessels drawing more than 9 or 10 ft. anchor inside of the buoy with the south side of the pier open. When passing between the anchorage of Calicut and Beypore, vessels should not approach the coast under 5 or $5\frac{1}{2}$ fathoms low water. There is a pier 526 ft. long, equipped with two cranes, each capable of lifting 2 tons.

Loading is carried on by means of lighters carrying up to 65 tons. The port is in rail communication with the other commercial centres of India by means of the Madras Railway. Supplies and provisions may be procured, but no coal for steamers. There are no facilities for repairs.

Port Charges.—Light Dues :—Steamers, 7 pies per net reg. ton, except in the case of vessels leaving any port in the Bombay Presidency and bound for Tellicherry, or any port in the Presidency of Madras north of the port of Tellicherry, when the rate is 5 pies per net reg. ton. Sailing vessels, half the steamship tariff. **Port Dues :**—A foreign sailing ship or steamer trading with the Strait Settlements calling at one port in the western group, $2\frac{1}{2}$ annas, payable every 60 days ; any other foreign ship or steamer calling at any one port in the western group, $2\frac{1}{2}$ annas, payable on entry into the port, a foreign ship or steamer trading with the Straits Settlements and calling at more than one port in the western group, $3\frac{1}{2}$ annas, payable at the first port of call and available for 60 days ; any other foreign ship or steamer calling at more than one port in the western group, $3\frac{1}{2}$ annas, payable once for each voyage. Coasting steamers calling at one or more ports in the western group, $2\frac{3}{4}$ annas, payable at the first port of call and available for 30 days.

Boat Hire.—

Between Sunrise and 8 p.m.

All boats when laden—

	Rs.	a.
From the beach to vessels, under 3 fathoms at all ports, per trip . . .	0	6
From the pier at Calicut to vessels, in 3 fathoms and under, per trip . . .	0	4
From the beach to vessels, in 3 fathoms and under 5 fathoms, per trip . . .	0	14
From the pier at Calicut to vessels, in 3 fathoms and under 5 fathoms, per trip . . .	0	12

India—Calicut (*continued*).

	Rs.	a.
All boats when laden—		
From the beach at Calicut to vessels, in 5 fathoms and under 7 fathoms, per trip	1	8
From the pier at Calicut to vessels, in 5 fathoms and under 7 fathoms, per trip	1	6
From the beach at Calicut to vessels beyond 7 fathoms, per trip, according to agreement.		
Unladen boats proceeding to vessel to land cargo or passengers, one full hire.		
Return trip from vessels in 3 fathoms and not over 7 fathoms—		
From the same vessel, half the ordinary rates.		
From a different vessel, full ordinary rates.		
Transhipping between vessels in 3 fathoms and not over 7 fathoms—		
For the first trip, one ordinary rate.		
For each succeeding trip, half the ordinary rates.		
Water trip to vessels, including casks and filling, in 3 fathoms and not over 7 fathoms, 12 annas per hhd., in addition to the ordinary rate.		
Water trip in case of vessels supplying their own casks and filling, ordinary cargo hire.		
To vessels beyond 7 fathoms, according to agreement.		

Extraordinary Rates.

Boats with an awning, 4 annas in addition to ordinary hire.

Boats employed between 8 p.m. and 4 a.m., double hire.

Between 4 a.m. and sunrise, one and a half the ordinary rates.

During monsoon months, viz., from May 15 to August 15, double hire.

In case of extraordinary service, as proceeding to a vessel in distress within the limits of the port, the port officer shall adjudge and allow such additional hire as the circumstances of the case may seem to warrant, reporting the same for the information of the collector of the district.

CALINGAPATAM.

Calingapatam is in lat. 18°20' N., long. 84°10' E.

Imports.—European manufactures.**Exports.**—Gingelly seed, rape seed, grain, and mustard.

Accommodation.—The anchorage is in 5 to 6 fathoms, about $\frac{1}{2}$ to $\frac{3}{4}$ mile distant on blue mud and sand. During the S.W. monsoon vessels should anchor in 5 fathoms, with the port flagstaff bearing W.N.W., and the lighthouse S.S.W. In the N.E. monsoon the best position for shipping operations may be found with the port flagstaff bearing W. $\frac{1}{2}$ N., and the lighthouse S.S.W. $\frac{1}{4}$ W., in 5 fathoms. It is said to be the best anchorage, except Coringa, in the S.W. monsoon. Vessels load and discharge by surf boats carrying from 1 $\frac{1}{2}$ to 2 tons each.

Port Charges.—**Port Dues** :—3 a. per ton : in ballast, $\frac{3}{4}$ of this rate. **Light Dues** :—3 pies per ton. **Stevedore** :—Loading, 4 to 5 a. per ton ; discharging, 8 a. per man per day. **Provisions** :—Fresh meat, fish, and country vegetables, in limited quantity. Water bad.

CANNANORE.

Cannanore is in lat. 11°57' N., long. 75°19' E.

Population.—About 27,811.

Imports.—Rice and paddy in large quantities. Piece goods, twists, liquors, wines and spirits, oilman stores, tobacco, almonds, sugar, Arabian dates, onions, grams, molasses, etc.

Exports.—Pepper, areca nuts, coir yarns, copperas, cocoanuts, salt fish, deer horns, bamboos, and timber of all kinds.

Accommodation.—This is a military station. Vessels may anchor in 5 $\frac{1}{2}$ to 6 fathoms with the flagstaff from N.E. by N. to N.E. by E., about 2 $\frac{1}{2}$ miles off shore. Large ships should be careful not to approach the

India—Cannanore (continued).

point too closely. Ships' boats can easily land in the bay north-east of the Fort; the Custom House is on the sandy beach nearly $\frac{1}{2}$ mile east of the Fort. There are a few sunken rocks off Cannanore Point, but not outside of 4 fathoms. Vessels should be careful not to go too near these rocks. The port limits are :—*To the north.*—The boundary pillar 1 mile north of the Fort. *To the south.*—The boundary pillar 2 miles south of the Fort. *To the east.*—The seashore between them, to within 50 yards of high water mark, spring tides. *To the west.*—The space enclosed by two lines running due west from the boundary pillar to 9 fathoms water.

Quarantine.—The harbour facing the south boundary pillar, 2 miles off the Fort, is fixed for the quarantine of vessels infected with contagious disease. No communication with the shore can be held until a ship is visited by the health officer in such cases.

Water:—Good water may be obtained from wells on the beach north-east of the Fort. **Provisions:**—Fresh provisions and stores of various kinds and excellent fruit may be procured.

Captains of vessels are warned not to make any bargaining with dubash boats that come out to meet them, but wait till they have seen the port officer.

Port Charges.—Port Dues:—Foreign vessels, $3\frac{1}{2}$ annas per reg. ton; coasting steamers, $2\frac{3}{4}$ annas per reg. ton; coasting sailing vessels, $1\frac{1}{4}$ annas per reg. ton. **Customs Fees:**—Entrance and clearance, 4 Rs. **Madras Coast Light Dues:**—Sailing vessels, 30 tons and over, $3\frac{1}{2}$ pies per ton; steamers, 7 pies per ton (payable once in 30 days).

BOAT HIRE.

1. Boats of 2 tons and under, laden or unladen.

To all vessels in 3 fathoms	6 annas.
" " 5 " and under.	14 "
" " 7 " and over, according to agreement	1 $\frac{1}{2}$ rupees.

For every ton or fraction of a ton beyond two, one-half of these rates additional.

2. Transshipping trip and return trip, half the above rates.

3. Trip between 8 p.m. and 4 a.m., double hire; 4 a.m. and sunrise, $1\frac{1}{2}$ hire; during monsoon months, i.e., May 15 to August 15, double hire.

4. Detention alongside of vessels more than 3 hours, double the above rates.

5. With an awning, 4 annas additional.

COCANADA.

Cocanada is in lat. $16^{\circ}55'$ N., long. $82^{\circ}10'$ E.

Exports.—Rice, sesame, cotton, tobacco, and castor oil.

Accommodation.—This is a well-situated roadstead in one of the mouths of the Godavery; the anchorage is in excellent holding ground about $4\frac{3}{4}$ miles from the mouth of the Cocanada River. Vessels should anchor with the following bearings:—

Vakalapudi Lighthouse from N.W. $\frac{1}{4}$ W. to N.W. $\frac{1}{2}$ W. and the Old Cocanada Lighthouse—an excellent landmark—S.W. $\frac{3}{4}$ W. in $4\frac{1}{2}$ to 6 fathoms at low water. Vessels coming from the south should make Sacramento lighthouse and proceed thence to the anchorage with the above bearings,

India—Cocanada (*continued*).

giving a wide berth to the black pillar buoy marking the spit of Hope Island. Sacramento shoal is lighted by a good 20 mile flash light. From the north vessels are guided by a chain of hills which stop 30 miles from the roadstead. 4 miles north of Cocanada stands the Vakalapudi Lighthouse 80 ft. above high water level, with a quick flashing light visible at 18 miles. Boats, with a capacity of from 10 to 70 tons, are employed in loading and discharging cargo. Cargo is generally handled by the ship's crew and coolies, but stevedores can be obtained. There is a screw-pile pier 165 ft. long, and 16 ft. wide; depth alongside at high water 6 to 7 ft., low water 4 to 5 ft. There are two half-ton cranes on the pier and a 2½-ton hand crane, and a 12-ton steam crane 50 yards west of the pier. Wooden ships of 250 tons are built, and small repairs can be executed. There are sheers to lift 7 tons.

Cargo may be shipped and discharged on a guarantee letter from the agents that the ship's papers are in order. Vessels arriving from a plague infected port are inspected daily until the tenth day of leaving that port.

No ballast of any description is to be thrown overboard in less than 12 fathoms low water. Shipping or landing cargo in ships' boats is strictly prohibited. Should a vessel have sustained any damage on the voyage, or should any other accident have rendered her unable to proceed to her port of destination, the Commander should enter a protest to the Port Officer. Ships in ballast are to be reported accordingly to the Port Officer. The boatmen are not to be employed on board ships or vessels in the roads or in any occupation whatever except in loading and unloading, and working their boats.

Port Charges.—Port Dues :—Vessels in ballast, 2 a. 1 pie per ton; vessels with cargo, 2 a. 9 pies per ton. **Light Dues :—**7 pies per ton. The payment of the dues at any port between Gopaulpore and Tuticorin exempts the vessel from further payment at any of the above ports for a period of 60 days in respect of port dues, and 30 days in the case of light dues.

Boat Hire :—6 to 8 a. per ton of cargo. **Firewood :—**2 Rs. 8 a. per 500 lb. **Provisions** are cheap.

COCHIN.

Cochin, in lat. 9°57' N., long. 76°13' E., is about 29 miles from Alleppey. Distance from Liverpool by the Cape, 9,945 miles; by Suez Canal, 6,462 miles.

Population.—About 20,000.

Exports.—Cocoanut oil, coir yarn, fibre and rope, pepper, ginger, teak, arrowroot, coffee, tea, copra, cardamoms, cocculus indicus (fishberry), fish oil, hides, nux vomica, turmeric, and dried fish.

Accommodation.—The harbour and breakwater is capable of affording shelter to a large number of vessels. The coast between Alleppey and Cochin is low and well covered with cocoanut trees. The soundings are very even, and the coast during the fine season can be approached by day to 5 or 6 fathoms, about 1½ miles off shore. The lighthouse and flag staff, together with the two towers of the Santa Cruz Cathedral, form conspicuous day marks; at night the Cochin light is visible before the Alleppey light is lost sight of. The depth on the bar at low tide is 10 ft. ordinary springs, and 13 ft. high ordinary springs.

India—Cochin (continued).

The best anchorage in Cochin Roads for sailing vessels is from $4\frac{1}{2}$ to $6\frac{1}{2}$ fathoms, soft ground, 2 to $2\frac{1}{2}$ miles off shore, with the lighthouse bearing E. to E. by N. Steamers may anchor closer in 4 fathoms, with lighthouse bearing E. to E. by S.

The tides are exceedingly irregular both in strength and duration. The rise and fall never exceeds 3 ft. on the springs, but generally $2\frac{1}{2}$ ft. would be the average. The time of high water at the full and change is 11 h. 26 m. The tides run through the narrow entrance to this harbour. A strong ebb running against a moderate sea breeze will at all times cause a short chopping swell on the bar, which is very dangerous to boats manned by inexperienced men, although at the time there may be no breakers in the channel over the bar. Strangers ought to be very careful in using their own boats. During the rains the ebb tide will at times run out without interruption for 4 or 5 days together, the flood at that season being always uncertain in its duration.

The fairway channel over the bar is marked by two buoys painted black and red. The black buoy should be left on the port side going in. About half-way between the black fairway buoy and Vypeen Point is another black buoy, to mark the edge of a dangerous sand spit, over which there is a very strong set to the southward at certain times of tide.

Vessels load and discharge at Cochin only during the N.E. monsoon, from the end of August until the middle of May, and during the rest of the year at the auxiliary port of Mallipuram. From August until May vessels can come in safely and anchor in the roadstead in $4\frac{1}{2}$ to 5 fathoms, according to size. Vessels and steamers of any size drawing not over 11 ft. can come into the harbour with safety. As many advantages are gained by loading and discharging even part cargoes in the inner harbour, shipmasters should pay no heed to the representations of dubashes and others, whose interests are better served when vessels remain outside. The port officer will always give reliable advice regarding bringing vessels inside, and experienced Government pilots can be had. No towage is necessary. During the N.E. monsoon the sea breeze always blows in shore in the afternoon, and the land breeze off shore during the mornings.

Cochin is connected by telegraph, and mails arrive and depart daily. The railway terminus is at Ernakulum, across the backwater opposite Cochin. The coasting steamers between Bombay and Calcutta call once and sometimes twice a week. The climate is moist. Vessels can be hove down and repaired. Provisions are cheap.

Measurement goods are measured before shipment, and quantity entered in bills of lading. Bag cargo and dholls are paid for according to net weight delivered.

A copy of port rules is given to all captains.

Lights.—A group occulting white light of the 4th order, dioptric, showing four occultations every minute, is exhibited on a column at an elevation of 37 ft. above high water spring tides, and can be seen from the deck of a ship at a distance of 12 miles in clear weather. The column, which stands on the beach a little south of the entrance to the harbour, is cement grey with white cupola.

Pilotage.—Experienced Government pilots can be had. Vessels laden, 1 a. 4 pies per ton; in ballast, 8 pies per ton.

India—Cochin (*continued*).

Port Charges.—Port Dues :—Foreign vessels, $2\frac{1}{2}$ a. per ton ; when calling at more than one port on the west coast, Madras Presidency, 3 annas per ton ; coasting vessels, sailers, $1\frac{1}{4}$ a. per ton ; steamers, $2\frac{3}{4}$ a. per ton ; vessels in ballast three-quarter rate.

Boat Hire.—*Ordinary Rates.*

	Outer roads.			Inner harbour.		
	Rs.	a.	p.	Rs.	a.	p.
Boats carrying 6 large pipes of oil, or 7 small, or 12 puncheons, or 20 hogsheads	2	8	0	1	0	0
Boats carrying 50 bales yarn or fibre, or 50 cases coffee or 12 bales of hides	3	4	0	1	0	0
Boats carrying 100 bags of rice, coffee, pepper, etc., per 100 bags	3	12	0	1	0	0
Boats carrying coir, dholls or rolls of coir yarn, or coils of coir rope, per boat load	3	6	0	1	0	0
One cargo boat loaded with general cargo or passengers	3	8	0	1	2	0
Landing ballast or coal, per ton	0	10	0	0	5	0
Transshipping cargo from one vessel to another, per trip	2	0	0	—	—	—
Transshipping coal or ballast, per ton	0	8	0	—	—	—
Licensed kettoo vullum or boats from 3 to 4 tons of cargo, per ton	2	4	0	0	12	0
Ordinary passenger boat, per trip	2	0	0	0	12	0
Water trip—For a load of 20 casks of 50 gallons each, including all charges per trip	15	0	0	12	12	0
Ditto, return trip, half the ordinary rates ; with cargo from a different vessel, full ordinary rates.						

Extraordinary Rates.

Boats proceeding to vessels beyond 7 fathoms low water but not outside of port limits, per trip, double rates ; for a boat employed between 8 p.m. and 4 a.m. in proceeding to outer roads and back, provided the boat left the shore after 8 p.m. per trip, double outer rates ; boats employed in inner roads between 8 p.m. and 4 a.m., per trip, double inner harbour rates. In cases of extraordinary service, as rendering aid to a vessel in distress within the limits of the port, the port officer shall adjudge and allow such additional hire as the circumstances of the case may seem to warrant, reporting the same for the information of the collector of the district.

	Rs.	a.	p.
For the use of the anchor boat from 8 a.m. to sunset, per diem	20	0	0
For the use of a hawser (besides making good any injury it may sustain), per diem	5	0	0
Transporting a vessel from one position to another after she has been moored, of 300 tons and upwards	7	0	0
Ditto, under 300 tons	5	0	0

Fees for Measuring and Surveying Vessels.—

	Rs.
Under 50 tons	7
50 tons and under 100 tons	11
100 " " 150 "	15
150 " " 200 "	19
200 " " 250 "	23
250 " " 300 "	27
300 tons and upwards	30

Fresh water can be obtained from the Alway River.

Pro Forma Charges on a steamer of 3,214 tons net reg., staying 4 days in port, and loading 1,101 tons of general cargo for New York :—

India—Cochin (continued).

	Rs.	a.	p.
Port dues at $2\frac{1}{2}$ a. per ton	502	3	0
Light dues at 7 pies per ton	117	2	10
Manifest fee, etc.	5	8	0
Boat hire on steamer's papers, etc.	18	0	0
Tally clerks, four at 2 Rs. each for 4 days	32	0	0
Provisions, etc.	198	15	2
Stevedore's account, stowing 1,101-169 tons at 4 a. per ton	275	4	8
Telegrams	30	0	0
Chamber of Commerce fees, measuring cargo	40	0	0
Postage, petties, etc.	10	0	0
Fee for reporting and clearing at port and Customs	15	0	0

1,244 1 8 = £82 18s. 9d.

COLACHEL.

Colachel, in lat. $8^{\circ}18' N.$, long. $77^{\circ}12' E.$, is situated on the south-west coast of India.

Imports.—Piece goods, rice, etc.

Exports.—Chiefly coffee and fish.

Accommodation.—This is an open roadstead; the anchorage is in 8 or $8\frac{1}{2}$ fathoms to leeward of four small islets, near the beach, which affords shelter to cargo boats when shipping or discharging cargo. A flag-staff is placed on the beach. All cargo has to be carried in small boats. The export trade is principally with Ceylon and London.

Port Charges.—There are no port dues. **Port Office** :—Extra fees for Sundays or holidays, 5 Rs. ; overtime, 2 Rs. 8 a. (Working hours, 9 a.m. to 5 p.m.) **Tally Clerks** :—1 R. per day ; overtime, 8 a. for 4 hours ; 1 R. 8 a. for all night. **Labour** :—General cargo, coal, or ballast, 1 R. 8 a. each tindal per day ; 12 a. each coolie per day. **Boat Hire** :—For coolies, 1 a. per head ; coal or ballast, 1 R. 8 a. per ton ; letters, 8 a. **Charges on Overcarried Cargo.**—5 R. per ton. **Ballast** :—Sand, 2 Rs. per ton.

Fresh water is obtainable, but provisions are scarce.

CORINGA.

Coringa is in lat. $16^{\circ}50' N.$, long. $82^{\circ}18' E.$

This place is no longer of any interest to shippers.

CUDDALORE.

Cuddalore, in lat. $11^{\circ}42' N.$, long. $79^{\circ}43' E.$, is about 86 miles S.S.E. of Madras. Climate healthy.

Population.—52,216.

Exports.—Sugar, spirits, ground-nuts, ground-nut oil, and oil-cake.

Accommodation.—Cuddalore is situated at the mouth of a river, which only admits boats of 6 ft. draught at high water. The anchorage is in $6\frac{1}{2}$ fathoms, about $1\frac{1}{2}$ miles off shore.

Provisions and vegetables are procurable.

Port Charges.—**Port Dues** :—Vessels calling at any one port in the eastern or western group, $2\frac{1}{2}$ annas per ton ; vessels calling at more than one port in the eastern or western group, $3\frac{1}{2}$ annas per ton (payable once for the voyage). **Stevedore** :—Loading or discharging, 5 annas per ton. **Ballast** :—Sand, 1 R. per ton, delivered alongside. **Water** :—1s. per cask of 75 gallons.

India—Cuddalore (*continued*).

Pro Forma Charges on a steamer of 3,000 tons net reg., with cargo of 5,000 tons:—

	Rs.	s.
Port dues at 3½ annas per ton	656	4
Madras Coast light dues at 7 pies per ton	109	6
Winchmen employed on board for 10 days	100	0
Stevedoring charges on 5,000 tons cargo at 5 annas per ton	1,562	8
Provisions	300	0
Dunnage mats, say 20,000 mats at 50 Rs. per 1,000	1,000	0
Dunnage wood, say 20,000 bamboos at 25 Rs. per 1,000	500	0
Mail boat hire attending captain	20	0
Dubash attendance	50	0
	4,298	2 = £286 10s. 10d.

GANJAM.

Ganjam, in lat. 19°25' N., long. 85°9' E., stands near the mouth of the river Rishikulia.

This port is now closed.

GOPAULPORE.

Gopaulpore is in lat. 19°18' N., long. 85°0' E.

Population.—About 4,000.

Exports.—Rice, sugar, hides, seeds, turmeric, horns, wheat, pulses, timber, and hemp.

Accommodation.—This is an open roadstead. There is good holding ground, sand and mud, in 9 fathoms off any of the go-downs; there are no dangers in the roadstead, and the soundings are regular and shoal gradually. Coasting steamers having steam handy may anchor safely in 6 to 6½ fathoms. The best anchorage is in 45 ft. low water, 5½ cables from high water line, Custom House flagstaff N.W. ¾ W., North Port pillar N. ½ W., South Port pillar W. by N. ½ N. magnetic. There is an iron pile pier, 860 ft. long, and having about 12 ft. of water at the end, which can sometimes be used by surf boats. The pier belongs to the Government and no ships come alongside. One crane to lift 2 tons is situated on the pier head. During the S.W. monsoon, from May to August inclusive, blows strong from that quarter, and a heavy surf prevails, sometimes stopping the work of shipping or landing for several days together; vessels should then ride with a good scope of cable, say 90 fathoms, with their winches shored up. Shipmasters are advised to take in as much cargo as possible in the early mornings, when there is frequently a lull in both wind and sea, and to do their stowing work during the afternoon, when the breeze invariably freshens, and stops the boats from working; but having regard to the state of weather and surf, vessels get very fair dispatch from the port. The cargo boats are small Masulah boats, but numerous, well handled and well adapted to the requirements of the port. Vessels visiting the port with all hands well, should hoist the ensign at any mast-head as a sign that no sickness prevails on board. By doing so the boats will be allowed to go alongside at once, and avoid delay in entering at the Custom House. Stone ballast must be hove overboard outside of 11 fathoms.

Lights.—A fixed bright light is shown from a high flagstaff fitted with top-gallant mast, visible in all directions from seaward about 10 miles, but in very clear weather it is sometimes seen 14 miles; in thick weather or

India—Gopaulpore (continued).

visible 2 or 3 miles, and occasionally not seen at all. A fixed red light at the pier head, visible 2 to 3 miles in clear weather.

The worst surf months are April, May, June, and October.

Lay days here (as along the coast) only count when the surf permits of cargo being shipped, or when the surf flag is not hoisted at the port flagstaff, unless otherwise specially arranged by charter-party.

Port Charges.—Port Dues :—Foreign vessels calling at one port in the Eastern Group, $2\frac{1}{2}$ annas per ton (payable on each entry) ; foreign vessels calling at more than one port, $3\frac{1}{2}$ a. per ton (payable once for the voyage) ; coasting vessels, $2\frac{3}{4}$ a. per ton every 30 days. **Light Dues :**—7 pies per ton, payable every 30 days. **Boat Hire :**—Accommodation boat, 2 Rs. per trip ; for coolies, 1 R. per trip ; cargo boats, 1 R. ; double charge when current flag is flying. **Measuring and Surveying Fee :**—30 Rs. **Coolie Hire :**—8 a. each per day ; they must be landed every night. Permission can be obtained for night-work, 1 R. each coolie. **Water :**—4 Rs. per 200 gallons in rough weather, and 3 Rs. per 200 gals. in fine weather ; Government casks included. Shipmasters are advised to fill up at more convenient ports if possible, as watering here during the S.W. monsoon is very difficult. **Provisions :**—Beef, 1 R. per 8 lb. ; mutton, 1 R. per 6 lb. Vegetables can be obtained ; fruit and potatoes scarce and dear.

The port and Customs do not charge any fees for entering and clearing vessels on holidays, or out of office hours, and no fees need be paid for supervision of free cargo ; a small fee is charged for supervising shipment of dutiable goods.

Pro Forma Charges on a steamer of 2,500 tons, coming from Calcutta, lying in the Roads 2 days, and receiving $556\frac{1}{2}$ tons of bale cargo :—

	Rs.	a.
Telegrams	9	5
*Port dues, $3\frac{1}{2}$ annas per ton	546	14
Stevedore	265	13
Court fee stamp on letter of guarantee for obtaining clearance of ship	0	8
Postages and petties	2	2
	824	10 = £54 19s. 6d.

* As the steamer arrived from Calcutta light dues for this coast were collected there.

MADRAS.

Madras, in lat. $13^{\circ}9' N.$, long. $80^{\circ}16' E.$, is the capital of Southern India, the seat of Government, and the principal emporium of trade in the Presidency. Distance from Liverpool by sea via the Cape, 10,760 miles ; via the Suez Canal, 7,214 miles.

Population.—509,346.

Imports.—Twists, piece goods, hardware, apparel, provisions, corals, wines and spirits, metals, silk, glass, books, railway material, timber, firewood, coal, and horses.

Exports.—Cotton, oil seeds, jaggery, coffee, indigo, rice, hides and skins, cardamoms, senna, pepper, redwood, horns, and drugs.

Accommodation.—The roadstead is exposed to both monsoons, and ships lying here should always take care to have a good scope of cable out, of at least 60 fathoms. Vessels intending to make a protracted stay

India—Madras (*continued*).

should veer to 80 fathoms, taking care always to have a second anchor in readiness for letting go in case of emergency. Ships calling for orders only should remain outside the 10 fathom limit, as any vessel lying within that line of soundings is considered within the port limit and is mulcted in port dues. All vessels entering the port must anchor in not less than $6\frac{1}{2}$ fathoms.

The artificial harbour has been formed by the construction of two sea arms, each about one mile long, with an entrance in the centre $515\frac{1}{2}$ ft. wide. The entrance is 37 ft. deep and 34 ft. at low water springs. Until quite recently the only convenience available for landing or shipping cargo at the port—besides the primitive surf, or masulah boats—was a screw pile pier built before the days of the present artificial harbour. Under the Madras Port Trust, called into being by Act of Parliament in 1905, a number of new and well equipped piers have been constructed, so that the landing and loading facilities are now thoroughly up-to-date. The North Pier is 3,817 ft. long, and the South Pier 3,931 ft. long. The Iron Screw Pile Pier is 1,000 ft. long, and only used by lighters. There are 21 cranes on the latter pier to lift from $1\frac{1}{2}$ to 20 tons, and 10 other cranes to unload machinery, etc. Titar Crane, on the South arm, can land weights up to 30 tons from the raft, and load on to railway trucks.

A new breakwater is also being constructed with the object of providing further protection to vessels entering the inner harbour.

When the new works are completed, probably early in 1909, there will be an import pier with complete hydraulic crane equipment, capable of dealing with 2,000 tons of cargo a day, a new dutiable import shed with 70,000 square ft. of floor area. The entire crane equipment, estimated at some 50 or 60 in number, is to be hydraulically worked. Provision is also to be made for the berthing of at least two ships of 26 or 27 ft. draught alongside the harbour arms, from whence they could place their cargo direct on shore.

The port is adequately provided with piping through which oil may be pumped into the merchants' installations from vessels lying at mooring.

Time Signals.—The semaphore on the roof of the Port Office is dropped at 1 h. 0 m. 0 s. p.m. India standard time, equal to 19 h. 30 m. 0 s. Greenwich mean time, and 0 h. 21 m. 10·5 s. local mean time. A gun is fired at noon and 8 p.m., but these signals are not accurate enough for rating chronometers.

Pilotage.—Fees include both inward and outward pilotage :—

	Rs.
Vessels up to 100 tons	5
„ over 100 to 200 tons	10
„ „ 200 „ 500 „	20
„ „ 500 „ 1,000 „	30
„ „ 1,000 „ 1,500 „	40
„ „ 1,500 „ 2,000 „	50
„ „ 2,000 „ 3,000 „	60
„ „ 3,000 „ 4,000 „	70
„ „ 4,000 tons	80
For shifting the berth of a vessel	10
„ re-mooring a vessel	10
„ mooring a vessel outside the harbour when she does not enter or leave it	20

Vessels re-entering the artificial harbour after discharging timber are exempted from pilotage fees. There is a fee of 3 Rs. levied on each steamer for a stern fast.

For all pilotages between sunset and sunrise on any working day or on

India—Madras (continued).

any Sunday or public holiday, a special fee of 5 Rs. must be paid to the harbour master and one-fourth of a day's pay for each member of the crew of that official's boat for every hour or part of an hour spent on duty in connection with the pilotage.

Port Charges.—Port Dues :—*Foreign vessels*, steamers or sailers, engaged in trade with Strait Settlements or Ceylon, 6 pies per ton, which exempts them from payment again for 60 days; engaged in other voyages, 6 pies per ton, payable on each entry into port. *Coasters*, steamers, 6 pies per ton, payable once in 30 days; sailers, 6 pies per ton, payable once in 60 days. Vessels entering in ballast and not carrying passengers, three-fourths rate; vessels entering the port but not discharging or taking in any cargo or passengers, half rate. **Mooring Fees :—**Steamers, 30 Rs. per day. **Light Dues :—**7 pies per net reg. ton. Steamers departing from any port in the Presidency of Bombay and bound for the port of Tellicherry or for any port in the Presidency of Madras north of Tellicherry, or vice versa, 5 pies per net reg. ton. Sailing vessels, half the above rates. **Boat Hire :—**Inside harbour from 4 a. to 1 R. per hour; outside harbour from 6 a. to 1 R. 3 a. per hour. **Water :—**Supplied by water boat inside harbour, 8 a.; outside harbour 1 R. per 100 gallons not including the cost of the water.

Pro Forma Charges on a steamer of 4,786 tons net reg. :—

	Rs.	a.	p.
Telegram to London	4	8	0
Port dues at 6 pies per ton	149	9	0
Light dues, Basses and Minicoy lights at $\frac{1}{4}$ d. per ton	74	14	4
Mooring fees at 30 Rs. per day	30	0	0
Pilotage fees and boat hire for sternfast, including overtime fees	98	0	0
Madras coast light dues at 7 pies per ton	174	7	0
Two stamped guarantees for clearance through the Custom House	1	0	0
One stamped guarantee for Port Office	0	8	0
Water, 3,000 gals. at 6 Rs. 8 annas per 1,000 gals.	195	0	0
Customs overtime	7	8	0
Ship's provisions, etc.	250	0	0
Coolie labour on board, 3 days and nights	900	0	0
Commission on import freight, £2,400 at $2\frac{1}{2}$ per cent.	901	12	2
Commission and insurance on disbursements, 2,909 Rs. 13 annas 6 pies	101	13	6
Postage and petties	20	13	6

2,909 13 6 = £193 19s. 10d.

MALLIPURAM.

Mallipuram, in lat. $10^{\circ}0'$ N., long. $76^{\circ}13'$ E., is 3 miles north of Cochin.

Accommodation.—It is the monsoon port for Cochin, and is important on account of the mud flat which exists off the port and Narrakel, and which breaks the force of the ocean swell; the usual sea existing in an open roadstead being barely felt in 5 fathoms water; under 3 fathoms the water is perfectly smooth. During the S.W. monsoon, which is from the middle of May to the end of September, vessels cannot conveniently work cargo off Cochin owing to the heavy swell and surf on the bar. Ships can run in here and bring up in $3\frac{1}{2}$ to $5\frac{1}{2}$ fathoms of water, soft bottom, and lie with perfect safety at all times. Caution is, however, necessary, as the mud bank is extending seaward and southward. The port is in native territory, but cargo discharged into lighters is landed at British Cochin. The best anchorage is in $5\frac{1}{2}$ fathoms, soft mud, on the following bearings :—Malli-

India—Mallipuram (*continued*).

puram flagstaff, N. 80 E.; Cochin lighthouse, S. 45 E.; Narrakel Obelisk, N. 53 E. mag. Steamers, in order to obtain a quick dispatch, may during fine weather approach nearer Cochin. A good light is displayed on the flagstaff from sunset to sunrise from May 15 to September 30, i.e., during the prevalence of the S.W. monsoon.

Port Dues.—2 a. per ton. Vessels entering and clearing within 7 days, without discharging or taking in cargo or passengers, are exempt.

MANGALORE.

Mangalore, in lat. $12^{\circ}59' N.$, long. $74^{\circ}57' E.$, is the principal port in S. Canara.

Population.—44,000.

Imports.—Sugar, salt, dates, grain, machinery, piece goods, petroleum, etc.

Exports.—Rice, coffee, machine made tiles, areca nuts, pepper, cardamoms, hides, turmeric, etc.

Accommodation.—There is good anchorage in 5 fathoms, sand and mud bottom, the lighthouse bearing N.E. to N.E. by E. The depth of water in the channel through the bar at low water is 10 ft.; tides rise 4 ft. The position of the anchorage is liable to variation. The bar is very rough in windy weather, and detention may occur, as the boats will not then come out.

Communication by sea is suspended from June 10 to September 10 every year on account of the S.W. monsoon. There is 2,000 ft. of quayage, but only available for lighters. One crane to lift from 1 to $2\frac{1}{2}$ tons.

Port Charges.—**Port Dues**:— $3\frac{1}{2}$ a. per ton; vessels in ballast three-fourths of the above rate. **Coolie Hire**:—1s. to 1s. 6d. per man per day, including food. **Water**:—Good water is supplied gratis by the Marine Department. The only charge made is 2 Rs. per trip for hire of tank of 200 gallons. Boat to convey water should be hired separately.

Bill of Health:—Free.

MASULIPATAM.

Masulipatam is in lat. $16^{\circ}12' N.$, long. $81^{\circ}11' E.$

Population.—About 39,500.

Imports.—Piece goods, etc.

Exports.—Paddy, castor seeds, gingelly seed, turmeric, chillies, and grain.

Accommodation.—There is a black buoy laid down to mark the anchorage in $4\frac{1}{2}$ fathoms. The best anchorage in the roads is with the flagstaff bearing W. $\frac{1}{2}$ N. to W.N.W., the ship's draught of water being the guide as to how close she may approach; with the above bearing a vessel in $3\frac{1}{2}$ fathoms will be about $3\frac{1}{2}$ miles from the mouth of the river. The holding ground in the roads is good, and with good ground tackle a vessel may ride out very heavy weather. When the surf is so high as to render communication with the shore dangerous, flag "M" will be hoisted at the port flagstaff; when the surf is impassable, flag "K." No cargo can be landed in ships' boats without special permission of the port officer.

No ballast must be thrown overboard in less than 10 fathoms, nor can

India—Masulipatam (continued).

any be discharged on the beach or elsewhere, from which it might be washed into the port, under a penalty of 250 Rs.

Port Charges.—Port Dues :—Vessels from foreign ports calling at this port only, $2\frac{1}{2}$ a. per ton ; foreign vessels calling at more than one port in the Eastern group, $3\frac{1}{2}$ a. per ton ; coasting vessels, $2\frac{3}{4}$ a. per ton ; vessels in ballast three-fourths of the above rates ; vessels not discharging or loading cargo, half the above rates. **Light Dues :—**Steamers, 7 pies per ton ; sailing vessels, $3\frac{1}{2}$ pies per ton. **Boat Hire :—**Large boats of 20 tons and upwards, 15 Rs. ; smaller boats, 10 Rs. 8 a. ; pinnans, 7 Rs. 8 a.

NAGORE.

Nagore, in lat. $10^{\circ}49'$ N., long. $79^{\circ}50'$ E., is a sub-port of Negapatam. This port is now closed to foreign trade.

NARRAKEL.

Narrakel, in lat. $10^{\circ}4'$ N., long. $76^{\circ}11'$ E., is 5 miles north of Cochin.

Owing to the formation of an extensive mud bank in front of the port, it has been abandoned for the port of Mallipuram, 2 miles south.

NEGAPATAM.

Negapatam, in lat. $10^{\circ}44'$ N., long. $79^{\circ}49'$ E., is situated near the outlet of a small river called the Cuddavayar. It is the principal seaport of the district.

Population.—59,000.

Accommodation.—The best anchorage in Negapatam roads is with the following bearings :—Lighthouse from W. by N. to W.S.W. in 4 to 5 fathoms water ; in N.E. monsoon vessels should anchor in at least 5 fathoms. In heavy weather a short broken sea gets up in the roads, and breaks a long way out during a gale of wind. In putting to sea from here ships will have to carry a press of sail, to enable them to clear the N.E. coast of Ceylon, with the wind at N.E.

The bar frequently shifts, and the depth on it varies. There is 800 ft. of quayage, but only 2 ft. alongside at low water and 4 ft. at high. There is 6 in. less at the entrance of the harbour. There are two cranes to lift 3 tons each, and one crane to lift 5 tons. Shipmasters are warned of the two wrecks which lie in 24 and 25 ft. of water respectively, with the following bearings—(1) Negapatam lighthouse S. 65 W. (mag.), Nagore Minarets N. 26 W., 24 ft. (2) Negapatam lighthouse N. 77 W. (mag.), South boundary pillar S. 63 W., Nagore Minarets, N. 28 W., 25 ft. water.

Passengers and cargo are landed at a jetty in the river, and most of the country vessels use their own boats the greater part of the year. The jetty has been improved, and a basin for mooring cargo boats is being constructed. A meteorological and tidal observatory has also been erected here. There is a civil hospital at Negapatam ; English and native seamen are treated there. Weekly steamship communication with Madras, Bombay, and Calcutta. Railway communication with Madras. Repairs cannot be executed.

Pilotage.—Charge for Keelakarary Channel, 10 a. per foot draught.

Port Charges.—Port Dues :—Foreign vessels calling at any one port in the eastern or western group, $2\frac{1}{2}$ a. per ton ; vessels calling at more than one port, $3\frac{1}{2}$ a. per ton (payable once for the voyage).

India—Negapatam (continued).

Madras Coast Light Dues :—7 pies per reg. ton, for steamers ; sailing vessels $3\frac{1}{2}$ pies per reg. ton (payable every 30 days). **Measuring and Surveying Fee** :—For vessels of 300 tons and upwards, 30 Rs. **Hospital Charges** :—English seamen, 10 a. per day ; native, 3 a. per day.

Boat Hire.—Charges between sunrise and 8 p.m. :—

	Vessels in and under 5 fathoms, l.w.	Vessels beyond 5 fathoms and not outside 6 fathoms l.w.
	Rs. a. p.	Rs. a. p.
Accommodation boat, per trip	1 8 0	2 4 0
" " return trip from same vessel	0 12 0	1 2 0
" " return trip from different vessel	1 8 0	2 4 0
First class cargo boats when carrying ordinary cargo, per trip	3 0 0	4 8 0
First class cargo boats, when carrying railway material or coal, per trip	4 0 0	6 0 0
Second class boats, per trip	2 4 0	3 6 0
Return fare for first and second class boats from same vessel	Half ordinary rate.	
Return fare for first and second class boats from different vessels	Full rates.	
Catamarans, per trip	0 8 0	0 12 0

Transshipping.

First and second class boats for the first trip, in addition to the fare for an ordinary trip	Two-thirds of the ordinary fare per trip allowed to the class of boat, according as the work is carried on in and under 5 fathoms or outside 5 fathoms l.w.
For each succeeding trip during the day	Half the ordinary fare allowed to the class of boat, according as the work is carried on in and under 5 fathoms or outside of 5 fathoms l.w.

Extraordinary.

Between 8 p.m. and 4 a.m., provided the boat proceeds outside the bar after 8 p.m., per trip	Double rates.
Between 4 a.m. and sunrise, per trip	Ordinary rate and half.
When surf or current flag is hoisted, per trip	Double rates.
When any increase in the ordinary crew is considered necessary by the port officer, per trip	4 annas for each extra man per trip.

In cases of extraordinary service, as rendering aid to a vessel in distress within the limits of the port, the port officer, or other officer in charge of the port, shall adjudge and allow such additional hire as the circumstances of the case may seem to warrant, reporting the same for the information of the collector of the district.

Provisions and marine stores can be obtained. Fish and fruit are plentiful and cheap.

Pro Forma Charges on a steamer of 2,443 tons reg., with a cargo of 6,400 tons coal for Negapatam :—

	Rs. a. p.
Port dues at $2\frac{1}{2}$ annas per reg. ton	381 11 6
Fee to Port Health Officer for inspecting the crew and officers	10 0 0
Fee to Assistant Port Health Officer for medical aid rendered to one of the native crew	20 0 0
Hospital bill for medicine supplied	0 4 0
Dieting in hospital of the crew	3 0 0
Cost of provisions supplied	305 7 6
Cost of washing ship's linen	7 13 6
Stevedoring 6,400 tons at 6 annas per ton	2,400 0 0
Agency fees	150 0 0

3,278 4 6 = £218 11s. 0d

*India.***PAUMBEN, OR PAMBAN.**

Paumben Channel, in lat. $9^{\circ}10'$ N., long. $79^{\circ}30'$ E., divides Ceylon from Hindostan, and is passable for vessels of 10 ft. draught at low water.

Pilotage.—

				Rs. a. p.		
Vessels drawing over	7 and	not more than	8 ft. .	1	4	0 per ft.
"	"	8	" " 9 " .	1	9	0 "
"	"	9	" " 10 " .	1	14	0 "
"	"	10	" " 11 " .	2	8	0 "
"	"	11	" " 12 " .	3	2	0 "
"	"	12	" " .	3	12	0 "

Port Charges.—Port Dues :—3 a. per ton, payable once in 30 days.

Tally Clerk :—1 R. per day, 2 Rs. per night. **Customs Overtime Charges :—**One-fourth of a day's charges per hour. **Port Officer's Fees :—**Sundays and holidays—Port officer, 20 Rs.; clerk, 1 Rs. 5 a. 4 pies; peon, 7 a. 6 pies. Holidays, before and after office hours, port officer, 10 Rs.; clerk, 10 a. 8 pies; peon, 3 a. 9 pies. **Health Certificate :—**5 Rs. **Hospital Charges :—**Medical attendance ashore, 5 Rs.; on board, 15 Rs. No charge is made for treatment in the hospital, except 2 Rs. a day for Europeans and 4 a. a day for natives, for food.

Charges for the Pamban Channels :—Hire of warps, 1 R.; hire of grapnel, 1 R. Warping canoe with five men, 1 Rs. 14 a. to 2 Rs. 4 a., according to weather. Extra men for one time, 3 to 5 a., according to weather; extra men for longer period, 4 to 6 a. for every 8 hours. **Labour :—**General cargo, coal, and ballast, 12 annas each coolie per day; 2 Rs. at night. **Charges on Overcarried Cargo :—**3 Rs. per ton. **Boat Hire :—**For coal and ballast, 6 Rs. per boat; for coolies, 4 Rs.; for mails, 4 Rs. for landing and carrying; for letters, 1 R. to 2 Rs. **Water :—**13 Rs. per boat of 800 gallons. **Ballast :—**Sand, 2 Rs. per ton. **Transshipment Charges :—**Direct, 1 R. 8 a. per ton; when landed, 3 Rs. per ton.

PORCA.

Porca, in lat. $9^{\circ}21'$ N., long. $76^{\circ}19'$ E., is in the dominions of the Maharajah of Travancore.

Accommodation.—This port is used during the worst part of the S.W. monsoon, when shipping is impossible at Alleppey. This is not always the case; it all depends on the shelter given by a mud bank which moves from Alleppey to about 15 miles south. This movement is not regular. Anchorage is in $4\frac{1}{2}$ to 5 fathoms, $1\frac{1}{2}$ or 2 miles from the shore. The coast is low and uneven, but it is safe to approach to $4\frac{1}{2}$ or 5 fathoms.

There are no boats here, and when wanted licensed cargo boats are sent down from Alleppey.

Port Dues.—See **Alleppey.**

Fresh water is obtainable.

PORTO NOVO.

Porto Novo is in lat. $11^{\circ}29'$ N., long. $79^{\circ}41'$ E.

Accommodation.—The road affords good anchorage in S. winds, being sheltered by Coleroon shoal. Vessels may anchor in 6 fathoms, mud, with the S. Chalambran pagoda S.W. $\frac{1}{4}$ W. and Porto Novo flagstaff W. $\frac{1}{2}$ N., 2 miles off shore.

PULICAT.

Pulicat is in lat. $13^{\circ}28'$ N., long. $80^{\circ}24'$ E.

This is a minor port of no importance.

QUILON.

Quilon, in lat. $8^{\circ}55'$ N., long. $76^{\circ}36'$ E., is situated on the west coast of India.

Population.—20,000.

Imports.—Piece goods, paddy, rice, salt, tobacco, etc.

Exports.—Cocoanut oil, copra, coir matting, yarn and fibre, tea, fish, etc.

Accommodation.—There is a depth of $5\frac{1}{2}$ fathoms at high water, and of 5 fathoms at low water. The anchorage is in 4 to 5 fathoms on a sandy bottom. As the coast here is very rocky, vessels should keep well out in 10 to 12 fathoms until the factory chimney (yellow brick) bears N.E., and then head for same, keeping between the two buoys which mark two rocks, and anchor in 4 to 5 fathoms. In the monsoon, when the buoys are lifted, vessels anchor in 8 to 10 fathoms, with the chimney bearing N.E. A small flagstaff stands nearly in front to seaward of the Custom House. Vessels working along the coast and not intending to call, would do well to keep out in 22 fathoms from Cape Comorin to the north of the Quilon reef. The port is closed from May till the end of September.

There is a lighthouse on Tangacherry Point, having a radius of some 20 miles.

Port Charges.—There are no port dues. **Boat Hire** :—12 a.

Labour :—8 a. per coolie.

Fresh water can be obtained, but provisions are scarce.

TELLICHERRY.

Tellicherry is in lat. $11^{\circ}49'$ N., long. $75^{\circ}28'$ E.

Population.—27,883.

Exports.—Coffee, pepper, cardamoms, ginger, arrowroot, cinnamon rice, and sandal-wood.

Accommodation.—The anchorage off the port in the fair season is in $4\frac{1}{2}$ fathoms, soft mud, and bears N. 6 E. of the lighthouse, and N. 61 E. of the south boundary pillar. There is a reef of rocks which forms a shelter, inside which vessels of 500 to 600 tons can anchor. There is a small pier with cranes for the use of lighters.

Railway communication with Madras and Mangalore. The construction of a line to Mysore, through the coffee-growing districts, is also under contemplation.

Ballast must not be thrown overboard in less than 10 fathoms of water.

Port Charges.—**Port Dues and Madras Coast Light Dues.**—Same as Cannanore. **Commission** on procuring freight, 5 per cent. **Boat Hire** :—Charges same as at Cannanore. **Customs Entrance and Clearance** :—4 Rs. **Provisions** :—Provisions can be obtained at moderate prices. **Water** :—The water is good.

*India.***TRANQUEBAR.**

Tranquebar is in lat. $11^{\circ}5' N.$, long. $79^{\circ}47' E.$, and about $6\frac{1}{2}$ miles north of Karikal.

Population.—About 25,000.

Import.—Timber.

Accommodation.—The best anchorage is to be obtained with the flagstaff bearing W. by N. to W. by N. $\frac{1}{2} N.$, in from $5\frac{1}{2}$ to 6 fathoms, 1 to $1\frac{1}{2}$ miles from the shore.

This port is in a decaying condition, and no regular trade is now carried on.

TUTICORIN.

Tuticorin, in lat. $8^{\circ}50' N.$, long. $78^{\circ}10' E.$, is situated on the Indian shore of the Gulf of Manaar, about 65 miles N.E. of Cape Comorin, and is the terminus of the South Indian Railway.

Imports.—Coal, railway plant, and general goods.

Exports.—Cotton, jaggery, senna, and yarn.

Accommodation.—The usual anchorage is in front of the town, about 5 miles distant, and outside Hare Island, in 5 to 6 fathoms of water. Vessels of 9 ft. draught can come inside. Signals to and from shore are repeated from the lighthouse on the island. There are two Government piers 600 and 500 ft. long respectively, with $3\frac{1}{2}$ ft. alongside at low water. One crane to lift 5 tons; six cranes to lift $\frac{3}{4}$ ton each.

During the months of August and September, when the strong winds are invariably from the land, vessels may anchor in 5 fathoms, but should never approach the ledge closer. Springs rise 31 in., and neaps 15 in. The N.E. monsoon generally sets in about the latter end of October, with light variable winds; squalls and heavy rains from the land continuing till near the middle of November. The weather then begins to clear up, and the N.E. wind blows steadily, increasing in force till the end of January, when the land and sea breezes commence. By April these have drawn round to S.W. and S.S.E. respectively, and about the middle of May the regular S.W. monsoon sets in, blowing with great violence till the end of July. The wind then moderates from S.W. to S.E., becoming light and variable for 18 to 20 days before the setting in of the N.E. monsoon. The currents generally set with the wind, varying in strength from one to two knots; outside the islands, at the change of the monsoons, they are like the winds—variable, and not to be depended on for two consecutive days. Steamers having coal cargoes to discharge should, if possible, not arrive in the months of June and July, when the S.W. monsoon is in full force; in other months they may reckon on discharging from 200 to 300 tons per day while the weather is moderate. Shipmasters should be careful not to arrange any terms with dubashes who may come on board. Cotton is steam-pressed, the bales weighing 515 lb. gross and measuring $9\frac{1}{2}$ cubic ft. Senna bales weigh 315 lb. gross, but measure slightly larger. Coffee is shipped in bags or casks, jaggery in bags. The latter article is liable to considerable loss from wastage.

Port Charges.—**Port Dues** :—3 a. per net reg. ton, clearing for ports of the Eastern Group for 30 days. **Pier Dues** :—2 a. per ton of 20 cwt.,

India—Tuticorin (*continued*).

or 40 cubic ft., on all cargo landed or shipped over the Government jetty.

Tonnage Dues :—On cargo, 1 a. per ton on all cargo landed or shipped ; on coal, 1 a. per ton on all landed.

Port Office Staff Fees and Overtime :—11 Rs. 3 a. 1 pie, being half a day's pay for port officer, one clerk, and one peon, before or after office hours (office hours, 9 a.m. to 5 p.m.). Sundays or holidays, 24 Rs. 10 a. 4 pies, being one day's pay for the full establishment.

Customs Fees and Overtime :—3 Rs. 0 a. 10 pies per hour for staff of Custom House engaged on holidays, or before or after office hours.

Tally Clerks :—1 R. per day ; night time and Sundays, 2 Rs. per day.

Hospital Charges :—8 a. per bed, exclusive of diet.

Medical Attendance :—15 Rs. for attending patients on board, exclusive of boat hire.

Labour :—General cargo, 1 R. for coolie, and 2 Rs. for tindal per day ; night work, 2 a. for coolie, and 4 a. for tindal per hour ; coal, discharging into boats, 6 a. per ton.

Charges on Overcarried Cargo :—4 a. per bag for landing and re-shipping ; cases and bales, 1 R. each.

Boat Hire :—For coolies, coal, ballast, 12 Rs. 8 a. per trip.

Transhipment Charges :—Direct, 1 R. 8 a. per ton ; on landed cargo same as on overcarried cargo.

Ballast :—Sand, 3 Rs. 4 a. per ton, f.o.b.

Water :—8 a. a barrel of 56 gallons, excluding boat hire at 12 Rs. 8 a. per trip. Supply very limited.

VIZAGAPATAM.

Vizagapatam, in lat. 17°40' N., long. 83°18' E., is one of the oldest ports on the Coromandel Coast.

Population.—40,890.

Imports.—European goods of all descriptions.

Exports.—Jaggery, cereals, hides, and manganese ore.

Accommodation.—The roadstead is well sheltered from S.W. monsoon by the Dolphin's Nose promontory, and when strong N.E. winds and sea prevail the bay is protected by the bend of the coast towards Waltair Point. The best anchorage is within the mouth of the river in 6 or 8 fathoms, and the port flagstaff from 27 N. to 45 W. Vessels load and discharge all the year round, but the time when absolute smooth water prevails is from December to April. The port possesses 133 licensed Masulah boats which carry 2½ tons each, and a private firm have a fleet of large boats built to land large and awkward materials. As a rule the boats supply the vessels with cargo faster than she can stow it away. There is rail connection by the Madras and Southern Mahratta Railway to the south and the Bengal-Nagpur Railway to the north ; Waltair being the junction. Slight repairs can be executed at the railway workshops. There are two cranes to lift from 2 to 10 tons respectively.

Port Charges.—**Port Dues** :—Same as at **Calicut**. Landing and shipping dues, 2 a. per ton on cargo landed ^{and} shipped payable by shipper, or consignee.

Light Dues :—Same as at **Calicut**.

Loading and Discharging :—Masulah boats, 1 R. 8 a. per trip.

Stevedore :—4 to 6 a. per ton.

Labour :—Coolies can be hired at 8 a. per day. Lascar sailors (Hindus) may be obtained by rail from Calcutta.

Provisions :—Plentiful, a sheep costing only 2 Rs.

Hospital :—There is a civil dispensary where Europeans may be treated.

INDIA (FRENCH).

The French possessions in India consist of five towns, Pondicherry, Mahé, Chandernagar, Karikal, and Yanaon. These have a combined area of but 205 square miles, while the population is under 300,000. Commercially they are all of little importance; the direct trade with France is reserved to French bottoms.

MAHÉ.

Mahé is one of the five French ports on the Malabar coast. It is 4 miles S. of Tellicherry, in lat. $11^{\circ}45' N.$, long. $75^{\circ}31' E.$

Population.—10,118.

Exports.—Rice, coffee, cocoa-nuts, pepper, etc.

Accommodation.—This is a free port. The town stands on the left bank of a small river, and can only be reached by coasting vessels of about 70 tons burden. Vessels anchor in 5 to 6 fathoms, about 2 miles off shore.

The bad season lasts during June, July, and part of August. The N.E. monsoon prevails from April to October, and the S.E. from October to April. All trade is carried on in the fine season. The trade between Mahé and France is reserved to French bottoms.

Tonnage Dues :—20 c. per ton.

PONDICHERRY.

Pondicherry is in lat. $11^{\circ}55' N.$, long. $79^{\circ}50' E.$

Population.—46,580.

Imports.—Cotton, gunny bags, seeds and pulse, wines, liquors, spirits, and betel nuts.

Exports.—Cotton yarn, blue cloth, oil, oil cakes, oil seeds, rice, hides, and skins.

Accommodation.—There is no harbour or dock. There is a pier about 800 ft. long, connected with the South Indian Railway, with three cranes at the head of it. In the fair weather season (from February 1 to October), the common anchorage in the road is abreast the town, in 7 to 8 fathoms, about $\frac{3}{4}$ of a mile distant; small ships moor in $5\frac{1}{2}$ to 6 fathoms. During the stormy months it is prudent to anchor well out, in 12 or 14 fathoms in what is called the outer road. Vessels load and discharge by means of catamarans or Masulah boats.

Pilotage.—Nil.

Port Charges.—**Tonnage Dues** :—1 a. 4 pies per ton. **Sanitary Dues** :—2 pies per ton. **Pier Dues** :—6 a. for each voyage of a vessel with cargo. **Boat Hire** :—1 R. 9 a. per trip from October 15 to January 20; 1 R. 5 a. from January 20 to October 15, with an additional 2 a. in each case for statement of goods carried. **Light Dues** :—1 a. per ton. **Labour** :—8 a. per man per day. **Magazine Rent** :—1 R. 8 a. per ton per month. **Commission** :—On freight procured, $2\frac{1}{2}$ per cent.

YANAON.

Yanaon is in lat. $16^{\circ}45' N.$, long. $82^{\circ}17' E.$

This place has ceased to be a port.

INDIA (PORTUGUESE).

The Portuguese possessions in India are divided into three districts—Goa, Damao, and Diu—the whole being under a provincial Governor-General. The total area of the three districts is less than 2,000 square miles, and were it not for the salt-making industry, and an extensive transit trade with British India in grain, rice, pulse, etc., they would be of little interest. During 1906 the ports were visited by 3,097 merchant vessels of 273,738 tons. The Madras and Southern Mahratta Railway Company's line, and the West of India Portuguese Railway connect the port of Mormugao with the British India railway system. There is a postal and telegraph service.

DAMAN.

Daman, or Damaon, in lat. $20^{\circ}18'$ N., long. $72^{\circ}48'$ E., is 82 miles N. of Bombay.

Population.—About 7,000.

Accommodation.—Ships can anchor in the roads in 6 fathoms of water, about 4 miles off the town. Vessels up to 500 tons can go inside the river, where there is 18 ft. of water at high tides. A pilot should always be employed.

Shipbuilding is carried on, vessels of 900 tons burden having been built. Provisions and vegetables are cheap and plentiful.

KARWAR.

Karwar, in lat. $14^{\circ}55'$ N., long. $74^{\circ}7'$ E., is in Sadashivgad Bay. Climate healthy.

Population.—About 15,000.

Imports.—Stores, etc.

Exports.—Teak, etc.

Accommodation.—This is a large safe haven, and vessels lie in 3 or 4 fathoms, two cable-lengths from the shore. In the S.W. monsoon vessels are sheltered from the W.S.W. swell, and are able to load and discharge cargo. Beikul Cove is a sort of wet dock under the shelter of Karwar Head. Sadashivgad lies just inside the river Kala Nuddi, about 3 miles N. of Karwar. There is about 15 ft. on the bar at high water, but once across there is over 20 ft. of water up to the town, at high springs. As the mouth of the river frequently changes, no dependence can be placed on the chart.

Coasting cargo steamers call here bi-weekly, and a ferry steamer also calls when plying between Mormugao and Mangalore.

Port Charges.—**Port Dues:**—Steamers, $4\frac{1}{2}$ a. per ton; sailing vessels laden, 3 a. per ton; sailing vessels in ballast, $2\frac{1}{4}$ a. per ton; vessel coming in owing to stress of weather, or for repairs, $1\frac{1}{2}$ a. per ton.

MORMUGAO.

Mormugao, in lat. $15^{\circ}25'$ N., long. $73^{\circ}54'$ E., is 240 miles south of Bombay, and 5 miles south of Aguada lighthouse.

India (Portuguese)—Mormugao (*continued*).

Population.—About 500.

Imports.—Kerosene, piece goods, machinery, etc.

Exports.—Full pressed cotton, grain, seeds, coffee, manganese, and timber.

Accommodation.—There is a quay wall 1,200 ft. in length, somewhat inadequately sheltered by a breakwater, with berthing accommodation for two large or three small vessels. The depth of water alongside the quay wall at low water is 24 ft. at two berths, and 18 ft. at the berth immediately adjacent to the breakwater; the tide rises about 6 ft.

A flagstaff and signalling station is situated on the promontory south of Aguada lighthouse.

Mormugao is the terminus of the Madras and Southern Mahratta Railway and West of India Portuguese Railway system, connecting with all parts of India.

This port is the outlet for a considerable traffic from the Southern Mahratta country, and the railway company have decided to add three more berths to the quay wall, and extend the breakwater sufficiently to ensure safety for vessels alongside the quay wall. These extensions, however, are not likely to be completed for at least six years. There is one 25-ton, one 5-ton, and nine 1½-ton, steam cranes on the quay wall. There is limited storage accommodation for perishable goods.

Coal for bunkering purposes can be obtained, also a limited supply of fresh water.

Pilotage.—A pilot is always at hand. Rates, from 50 to 70 Rs. per vessel, in and out.

Port Charges.—Tonnage Dues:—2 a. per net reg. ton (payable once in 30 days). **Quay Dues:**—1½ pies per ton per day (minimum 25 Rs.). **Wharfage:**—1 R. 2 a. to 4 Rs. 12 a. 6 pies per ton; coal, import, 1 R.; export, 8 Rs. **Customs Fees:**—Entrance, 22 Rs. 8 a. per steamer; clearance fees, 2 Rs. 2 a. 6 pies. **Stevedoring:**—3 a. per ton. **Medical Charges:**—10 Rs. per vessel. **Lighterage:**—2 a. per ton.

Poultry is plentiful, but fruit and vegetables are difficult to obtain.

Pro Forma Charges on a steamer, 2,679 net reg., 4,800 tons dead-weight, inwards from Europe with 2,670 tons cargo, dead-weight, and outwards to Europe with 4,800 tons.

	Rs.	a.	p.
Stevedore's account	1,826	11	6
Dubash's account	346	12	0
Customs entering fees	22	8	0
Tonnage dues	186	3	6
Quay dues	139	10	3
Port clearance	2	2	6
Consul's fee	1	14	0
Manifests, etc.	5	0	0
Bill of health	0	4	0
Pilotage	50	0	0
Water	87	0	0
Cranes	590	0	0
Trays	11	0	0
Mooring and unmooring	10	0	0
Medical attendance	20	0	0
Agency, £15 15s.	236	4	0

3,535 5 9 = £235 13s. 10d.

India (*Portuguese*).**NOVA GOA, OR PANJIM.**

Nova Goa, or Panjim, the capital of the Portuguese territory, is in 15°20' N., long. 74°0' E.

Population.—About 10,000.

Imports.—Piece goods, raw silk, sugar, etc.

Exports.—Hemp, pepper, cocoa-nuts, betel nuts, and salt.

Accommodation.—The anchorage is in 4 to 5 fathoms, with lighthouse bearing north. It is not considered safe during the height of S.W. monsoon. There is 13 ft. on the bar of the river at low water during the fine season, but during the S.W. monsoon vessels cannot enter.

Fresh water and provisions can be obtained.

FRENCH INDO-CHINA.

French Indo-China includes the eastern and by far the most populous part of the Indo-Chinese peninsula. This possession embraces the colony of Cochin-China, the protectorates of Cambodia and Annam, with the dependencies of Tonkin and Laos, as well as the territory, Kwang-Chau-Wan, on the coast of China, leased from China in 1898, and placed under the authority of the Governor-General of Indo-China. The combined possessions have a total area of 256,250 square miles, with a population of about 18½ millions.

Commerce.—The trade of French Indo-China is of an annual value of about 20 million pounds sterling; imports, 12 millions; exports, 8 millions. The chief imports are cotton yarn, cottons, tea, petroleum, paper goods, tobacco, salt, wine, metal, and metal goods; the exports include rice, fish, pepper, cotton, copra, silk, hides and skins, cardamoms, timber, bamboo, coffee, and live stock. In 1887 the French Indo-Chinese possessions were united into a Customs Union.

Internal Communications.—Energetic efforts are being made to open up trade with the interior by improving the means of communication. New transverse routes are being opened across Annam in order to reach the Laos territory and the Shan States, starting from Vinh, Tourane, and Saigon. In another direction recent years have witnessed rapid development of the State railway system, the line from Saigon to Mytho having been extended to Cantho (60 miles). Lines are also open for public traffic from Hanoi to Namdinh, thence to Ninbinh and Vinh, from Haiphong to Hanoi and Vietry on to Laokai. Lines also run, or are in course of construction, between Saigon and Khan-hwa, Tourane, and Hue, Tourane and Kwanglri, and from Phanrang to Langbian. When the work in hand is completed, there will be over three thousand miles of railway linking up the various territories. Steps are also being taken to make use of the waterways, and to this end a steamer service has been established on the Red River, and the navigation of the Mekong facilitated by laying down buoys. A canal 18 miles long, and 85 ft. wide, with a depth of 11 ft. 3 in., connects the Vaico and Saigon rivers, while another canal, 25 miles long, having a width which varies from 48 to 127 ft., and a depth of 14 ft. 9 in., runs from the mouth of the Mekong (the Bassac) to Cailon. Other canals are also in course of construction.

Currency, Weights and Measures.—The coinage consists of silver pieces as follows:—1 piastre (sometimes called the official dollar) ½ piastre, ¼ piastre, and 1/10 piastre. The Mexican dollar also circulates freely, and both this and the piastre may be said to be worth a little less than 2s. The Bank of Indo-China is a bank of issue, and affords every facility for the transaction of financial dealings.

Lighthouse and Anchorage Dues.—In Indo-Chinese ports lighthouse and anchorage dues are charged, the rate of which is 40 centimes per ton reg. for each vessel entering or leaving a port. Vessels entering or leaving with ballast are exempt. Lighthouse and anchorage dues will not be payable a second time by boats which, after having paid dues in

French Indo-China.

one port, leave same with a cargo destined for another Indo-Chinese port. If a boat, having paid entrance fees at one of the Indo-Chinese ports, sails with ballast in order to take up a cargo destined for abroad from another port of the Colony, clearance fees will be payable at the second port.

Customs Dues.—Free for French goods; dues for foreign goods according to the separate tariff for each country of origin of goods.

HAIPHONG.

Haiphong, in lat. $20^{\circ}53'$ N., long. $106^{\circ}40'$ E., is on the Cua-Cam river.

Population.—10,000.

Accommodation.—This port is now accessible to large vessels by the Cua-nam-Triêu (one of the arms of the Red River) parallel to the Cua-Cam, with which it has been connected by a cutting called the Dinh Vu.

There is a large iron wharf here which will shortly be extended. There are two bars at this port. The outer one is of sand, and has 11 ft. of water at ordinary low springs; the inner is of soft mud and has about 2 ft. less water. The rise of the tide is about 10 ft. The depth inside the port is about 24 ft. at high springs. Vessels load and discharge by lighters. There are no quays, etc., available for vessels drawing over 10 ft. There is a floating pontoon, 540 ft. long, with 24 ft. alongside at high water, used for mail steamers and vessels chartered by the Government. At the arsenal is a dock for small war vessels not drawing more than 10 ft., also a crane to lift from 15 to 25 tons. There is a patent slip, with cradle 130 ft. long, to raise 400 tons.

Vessels belonging to the Messageries Maritimes and the Chargeurs Réunis call here.

Pilotage.—Compulsory.

	Sailers not towed. Per ton. Fr. c.	Sailers towed or Steamers. Per ton. Fr. c.
Entrance or departure from Haiphong to the sea or vice versa by the Cua-Cam	0 27	0 18
Entrance or departure from the Cua-nam-Triêu to one mile south of Van-Châu	0 20	0 13
From the sea to Haiphong by the Cua-nam-Triêu and Van-Châu	0 33	0 22
From the sea to Haiphong by the Cua-nam-Triêu and the new canal	0 27	0 18
To pass the Van-Châu	0 13	0 09
Entrance or departure from the Cac-Ba	0 11	0 06
Entrance or departure from the Bay of Along for vessels coming from or sailing to the open sea	0 23	0 15
Entrance or departure from the Bay of Along for vessels coming from the Cac-Ba or from Haiphong, and vice versa	0 17	0 13
From the sea to Hongay, and vice versa	0 30	0 20
Vessels coming from Haiphong or from the Cac-Ba	0 23	0 15
From the Bay of Along to Hongay, and vice versa	0 11	0 06
Entrance or departure from Kébao and from the estuary of Tiên-Yên (when stoppage at the beacon "A" takes place at vessel's request)	0 27	0 18
From the open sea to the Beacon "A," and vice versa	0 18	0 13
From Haiphong to the Beacon "A," and vice versa	0 13	0 09
Loading from anchorage in Haiphong roadstead	0 06	0 04

The tariffs relating to entrance or departure from Kébao and from the estuary of Tiên-Yên (when stoppage at the Beacon "A" takes place at vessel's request) are not applicable to pilot at the station of Haiphong, who can work by contract.

The stay of a pilot on board a boat going, without stoppage, from on

French Indo-China—Haiphong (*continued*).

harbour to another, is not paid for; the pilot is only entitled to pilotage fees for leaving the first harbour and for entering the second. Exception is made for the voyage from Cuatray to Cua-Cam and vice versa; this pilotage will only be paid for as for entrance into Haiphong.

French vessels doing a coasting trade along the coast of Indo-China, of less than 250 tons reg., are exempt from compulsory pilotage.

Vessels which, having been unable to find a pilot on duty upon their arrival or departure, have crossed the bars without a pilot, are not obliged to pay pilotage fees.

The present tariff is reduced by one-third for boats carrying only a cargo or private goods, loaded to less than one-twentieth of their measurement.

Port Charges.—**Lighthouse and Anchorage Dues:**—40 centimes per net ton. Vessels in ballast, free. **Toll Dues:**—Imports, 20 c. per ton; exports, 10 c. per ton. **Dock Rates:**—According to tariff.

PORT WALLUT.

Port Wallut is in lat. $21^{\circ}12' N.$, long. $107^{\circ}33' E.$

Although called Port Wallut this is not a port, but simply a Customs station.

QUINHON.

Quinhon is in lat. $13^{\circ}43' N.$, long. $109^{\circ}11' E.$, on the coast of Annam.

This is an open roadstead, difficult of access in bad weather.

SAIGON.

Saigon, in lat. $10^{\circ}50' N.$, long. $106^{\circ}45' E.$, is the capital of French Cochin China. The town is situated upon one of the arms of the Donnai River, about 42 miles from the sea, 637 miles from Singapore, and 915 miles from Hong Kong.

Population.—50,870.

Imports.—English piece goods and other manufactures.

Exports.—Rice, fish, cotton, pepper, silk, etc.

Accommodation.—On Cape St. James is a fixed light of the first class, visible at a distance of 28 miles. Safe anchorage is to be found in the bay under the cape during the N.E. monsoon, and in quiet weather during the S.W. There is telegraphic communication with the town. The river is accessible to vessels of any draught, the "M.M." steamers, French transports, and ironclads finding no difficulty in proceeding up to the town. Difference of time between high water at Cape St. James and Saigon is $2\frac{1}{2}$ hours. Vessels are moored alongside both banks of the river, just below the town, in 8 to 10 fathoms. Tides run strong, particularly the ebb in the rainy season, at which time the action of the flood is very uncertain. Rise and fall, 15 ft. on an average. Cargo is taken to and from longside entirely in lighters.

Docks.—There is a basin 240 ft. long by 78 ft. broad, in which gunboats and other vessels drawing not more than 13 ft. can be repaired; larger vessels can enter the floating dock. The French Government has a large machine shop capable of doing the heaviest work. There is a private firm, of considerable size, who undertake any ordinary repairs.

French Indo-China—Saigon (continued).

Regulations concerning smuggling are very stringent, and shipmasters should be very particular to search their ships, especially for opium, while engaged in the coasting trade, for heavy penalties are inflicted. Contraband articles are arms, ammunition, fire-crackers, spirits, and opium.

River Rules.—Vessels must set their ensigns from sunrise to sunset while moving in the river, must not leave the branch of the river ordinarily used, must not allow Asiatic passengers to land, or commence discharging cargo without a special permit—in fact, must not move in any matter without permission.

Duties.—The following duties are payable—Spirits, 10 c. per litre. Chinese spirits, 30 c. per litre; arms, etc., 10 per cent. *ad val.* There is an export duty upon rice and paddy, 21 c. per picul; to France, or colonies in French vessels, 10 c. per picul; cattle, 20 c. per head. In addition to these special duties the general tariff of France is in force.

Pilotage.—Compulsory, and under Government supervision, but pilots are not responsible for anything. Pilotage is 28 c. per net reg. ton for laden, and 21 c. for empty steamers, from Cape St. James to the town, and proportionate rates for shorter distances. For detention of the pilot 16 dols. per day is charged.

Towage:—There is no regular service, but, when necessary, the steamers of the “Messageries Fluviales” may usually be obtained at the following rates: Vessels of 150 tons and under, 65 dols.; above 150 tons, 10 dols. for each 50 tons; above 1,500 tons, according to agreement.

Port Charges.—Tonnage Dues:—40 c. per reg. ton for laden vessels; those arriving or leaving in ballast do not pay any port dues. These dues are levied upon steamers and sailing vessels each trip. Vessels are considered in ballast when their cargo does not exceed one-twentieth of their carrying capacity, or in value more than 1 dol. per ton. **Stevedorage:**—The charge for labour varies with the demand for it. Loading ranges from 6 dols. to 7 dols. per 1,000 piculs. **Water** is brought alongside in boats, and costs 80 c. per ton. **Coal** can always be obtained. **Brokerage**—The charge for doing a steamer’s business is 35 dols. Commission for chartering is $2\frac{1}{2}$ per cent.

Pro Forma Charges on a steamer of 1,000 tons, arriving in ballast, leaving laden:—

	Dols.	c.
Inward pilot, 21 c. per ton	210	00
Outward pilot, 28 c. per ton	280	00
Stevedore, 30,000 pes. at 6 dols.	180	00
Compradore about	75	00
Doctor	18	00
Water	10	00
Commission	35	00

808 00 = £80 16s. 0.

TOURANE.

Tourane, in lat. 16°0' N., long. 108°10' E., is the chief port of Annam and is 40 miles S.E. of Hué, a railway to that town being under construction.

Accommodation.—Anchorage is in from 3 to 4 fathoms of water in Tourane Bay, but in bad weather, and in fogs, the entrance is difficult. The roadstead, although surrounded by high mountains, is insufficiently sheltered from bad weather to protect the channel. Trade is well developed and fruits, vegetables, and poultry can be obtained.

JAPAN.

The Empire of Japan consists of five principal islands—Honshiu, Kiūsiū, Shikoku, Hokkaidō, and Taiwan (Formosa), together with a vast number of small islands, of which no less than 545 are considered worthy of administrative recognition. The main islands stretch along off the eastern coast of Asia, divided from the mainland by the Sea of Japan, the whole empire being contained within the limits of latitudes 21°45' N. to 50°56' N., and longitudes 119°18' E. to 156°32' E. The 550 islands which, with Karafutu, the Japanese portion of Saghalien, constitute the empire, have a total area of 173,879 square miles, with a population of 52,518,518, and a coast line of 18,113 miles in extent.

Commerce.—The foreign trade of the empire during the year 1907 amounted to 926,880,219 yen (£94,877,049), made up of imports 494,467,346 yen (£50,614,754), and exports 432,412,873 yen (£44,262,295). Amongst the articles imported were cotton and wool goods, grain and seeds, iron, steel, hardware, machinery, sugar, oils, waxes, drugs, chemicals, medicines, dyes, paints, pigments, beverages, comestibles, paper, and stationery; whilst the exports consisted chiefly of manufactured silk and cotton goods, metal articles, tea, and marine products. The whole of this trade is conducted through 33 commercial ports, at which there were entered during 1907, 10,965 steamers of 20,199,653 tons, and 2,866 sailing vessels of 137,042 tons, or a total of 13,831 vessels, with an aggregate tonnage of 20,336,695 tons. Customs duties on imports and on certain articles of export are imposed in accordance with the provisions of the general tariff which came into operation in a revised form on October 1, 1906. This tariff specifies 538 different articles, divided into nineteen groups, and although it is framed on an *ad valorem* basis, it imposes specific duties on many articles, the ratio of the total Customs duties to the value of the dutiable goods being 15·65 per cent., the annual income from this source, exceeding 45,000,000 yen (£4,610,616), constituting an important factor in the national revenue.

Mercantile Marine.—The commercial navy of Japan at the close of 1908 consisted of 6,133 vessels, with an aggregate of 1,525,659 tons, made up of 1,618 steamers with a tonnage amounting to 1,153,340 tons, and 4,515 sailing vessels with 372,319 tons.

Currency, Weights and Measures.—The monetary system of the empire is based on the coinage law passed in 1897, which established a gold standard. The coinage unit is the yen of 100 sen = 2s. 0·582*d.*, the exchange on London being now maintained at 2s. 0½*d.* The standard gold coins in circulation are of three denominations, namely, 5-yen, 10-yen, and 20-yen, the subsidiary silver coins being 10-sen, 20-sen, and 50-sen pieces; a certain number of 5-sen silver pieces belonging to a previous coinage system are also allowed to circulate. Other subsidiary silver coins consist of nickel 5-sen pieces, and bronze 1-sen and 5-rin (100 rin = 1 sen) pieces; the former 2-sen, 1-sen, 5-rin and 1-rin copper pieces are allowed to circulate. Under the Convertible Bank-notes Law of 1884, the Bank of

Japan.

Japan issues notes of a face value of 1 yen, 5 yen, 10 yen, 20 yen, 50 yen, 100 yen, and 200 yen, which are convertible into gold on presentation.

In Taiwan (Formosa), the circulation of the silver yen, the currency of which is prohibited in Japan proper, is at present permitted in actual transactions, but steps are being taken with a view of eventually making the coinage system of Taiwan uniform with that of the other portions of the empire. The Bank of Taiwan has authority to issue bank-notes with a face value of not less than one gold yen, which notes it must exchange for gold coin on presentation.

WEIGHTS AND MEASURES.

1 ri (land)	= 2.440 miles.
1 ri (marine)	= 1.150 "
1 sq. ri	= 5.955 sq. miles.
1 cho = 10 tan	= 2.450 acres.
1 tsubo	= 3.953 sq. yds.
1 koku = 10 to = 100 sho (liquid)	= 39.703 gals.
1 koku = 10 to = 100 sho (dry)	= 4.962 bushels.
1 koku (capacity of vessel)	= $\frac{1}{16}$ of one ton.
1 kin = $\left\{ \begin{array}{l} 1.322 \text{ lb. Avoir.} \\ 1.607 \text{ lb. Troy.} \end{array} \right.$	
1 kwan = 1,000 momme	= $\left\{ \begin{array}{l} 8.267 \text{ lb. Avoir.} \\ 10.047 \text{ lb. Troy.} \end{array} \right.$

Internal Communications.—Until recently, the railway system of Japan comprised twelve Government lines and thirty-three private lines, so that the transportation arrangements lacked uniformity and entailed no little economic disadvantages. With a view to remedying this, the Imperial Diet, in March, 1906, passed a Railway Nationalization Law, under which all the railways in the empire will, within the period 1906–15, be brought under Government control. These railways had, at March 31, 1907, a total mileage of lines open to public traffic amounting to 4,831 miles (Government railways 3,116 miles; private companies, 1,715 miles). The European postal system was adopted in 1871, Japan joining the International Postal Union in 1877. In 1878, the Government assumed the control of the telegraph service, domestic and foreign, which prior to this date had been conducted by the Great Northern Telegraph Company, and in 1900 the telephone business was opened as a Government enterprise. Since these services were taken over by the Government they have shown great development, and at the end of the financial year 1907 there were open for public service, 6,449 post offices, 2,815 telegraph offices, and 421 telephone offices.

Tonnage Dues.—5 sen per reg. ton on entry at each port, or a single payment of 15 sen per reg. ton for one year from date of payment for any one port. No tonnage dues are payable by ships entering a port in distress or under other unavoidable circumstances.

Pilotage.—For vessels not exceeding 1,000 gross tons, with 12 ft. deepest draught :—

Inland Sea District—	Steamers.	Sailing ships.
	Yen.	Yen.
Kobe to Rokuren, and vice versa	100	175
Kobe to Moji, and vice versa	100	175
Moji or Shimonoseki (Bakan) to Rokuren, and vice versa	25	35
Moji or Bakan to eastern (inside) entrance to Straits, and vice versa	25	35
From off Rokuren to inside entrance to Straits, and vice versa	40	50
Between Bungo Channel and Moji or Bakan	50	80
Between Bungo Channel and Rokuren	70	100
Between Kobe and northern entrance to Bungo Channel	100	175
Between Kobe and Tomagashima	30	45

Japan.

	Steamers. Yen.	Sailing ships. Yen.
Inland Sea District—(continued)		
Between Osaka and Tomagashima	40	60
Between Kobe and Osaka	15	25
Tokio Bay District—		
Between Yokohama and boundary	30	45
Between Shinagawa and boundary	40	60
Between Yokohama and Shinagawa	15	25
Nagasaki—		
Between anchorage and boundary	20	30
Hakodate—		
Between anchorage and boundary	20	30
Other districts—		
Between the eastern limits of the Inland Sea (Tomagashima, Kii Channel) and the Tokio Bay Pilot District (Shiroga-Shima, Gulf of Yedo)		150
Between the western limits (Rokuren) and Nagasaki District (Iwo-Shima)		50
Between the western limits (Rokuren) and Nagasaki District, if engaged at Moji		75
Between the western limits (Rokuren) and Karatzu		50
“ “ “ Kuchinotzu		75
“ “ “ Misumi Harbour		100
“ “ “ Nagasaki (Iwo-Shima) and Karatzu		50
“ “ “ Kuchinotzu		50
“ “ “ Misumi Harbour		75

For all vessels above 1,000 gross tons, or drawing more than 12 ft., add 3 per cent. for each 1,000 tons or fraction thereof, and 3 per cent. for each foot or fraction thereof.

Customs Regulations.—Entry:—When a foreign trading vessel enters a Japanese port, the master must give notice of entry to the Customs authorities within 24 hours of arrival, and must also at the same time produce the manifest, a list of hatches, an inventory of articles for ship's use, a passenger list, together with a certificate of the vessel's nationality, and the permit of clearance from the port of departure or other documents which may be substituted for this purpose.

Discharging and Loading.—Vessels carrying foreign goods cannot, except in cases where the permission of the Director of Customs has been obtained, discharge cargo until after the production of the manifest, or between the hours of sunset and sunrise, or on public holidays. The landing and shipment of all goods must be made at the places appointed for that purpose by the Customs authorities. Merchandise may only be imported or exported through an open trade port, except in the case of goods sold in order to defray the cost of repairing, assisting, or rescuing a shipwrecked or distressed vessel, or to provide means necessary for enabling it to continue its voyage.

Clearance.—When a vessel engaged in foreign trade wishes to leave an open port, the master shall give notice of departure to the Customs, and receive a clearance permit.

Customs Fees.—The hours during which the Custom Houses of Japan are open for the transaction of business are from 10 a.m. to 4 p.m., except on Sundays and holidays. Persons wishing to transact business during other hours may do so on payment of the following fees:—

I. For special opening Customs on ordinary days.

From 4 p.m. to 6 p.m.	30 yen.
From 4 p.m. to 12 p.m.	90 yen.
From 4 p.m. if continue over 12 p.m.	190 yen.
From sunrise to 10 a.m. (except the above case), 40 yen.	

Japan.*II. For special opening Customs on Sundays or holidays.*

From 10 a.m. to 4 p.m.	50 yen.
From 10 a.m. to 6 p.m.	80 yen.
From 10 a.m. to 12 p.m.	140 yen.
From 10 a.m., if continue over 12 p.m.	240 yen.
From sunrise to 10 a.m. (except the above case).	40 yen.

III. For special opening Customs Branch Offices on ordinary days or holidays.

From sunrise to sunset	per hour, 2 yen.
From sunset to sunrise	per hour, 3 yen.

IV. For extra work of loading and unloading, forwarding, withdrawal, and dispatching of goods at Customs.

From sunset to sunrise	per hour, 3 yen.
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V. For loading and unloading, forwarding, withdrawal, and dispatching of goods on Sundays or holidays at Customs.

From sunrise to sunset	per hour, 2 yen.
From sunset to sunrise	per hour, 3 yen.

VI. For loading and unloading, forwarding, withdrawal, and dispatching of goods at Customs Branch Offices on ordinary days.

From sunset to sunrise	per hour, 1-50 sen.
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VII. For loading and unloading, forwarding, withdrawal, and dispatching of goods at Customs Branch Offices on Sundays or holidays.

From sunrise to sunset	per hour, 1 yen.
From sunset to sunrise	per hour, 1-50 sen.

VIII. For examination of goods outside the Customs Compound or Customs Branch Offices.

Per hour needed for the examination	3 yen.
If travelling expenses are wanted, the actual cost shall be added.	

IX. For the entry of foreign trade vessel to unopened ports.

Per each time	10 yen.
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The public holidays observed by the Customs authorities are—
Sundays.

January 1, 3, 5, and 30.

February 11.

March, Shunki-Korei-sai (Spring Festival).

April 3.

May 15.

September, Shūki-Korei-sai (Autumn Festival).

October 17.

November 3 and 23.

December 25 and 31.

ANPING.

Anping, in lat. 22°59' N., long. 120°13' E., is situated on the W. coast of Formosa. It is the port of Tainanfu, the chief city of South Formosa.

Export.—Sugar.

Accommodation.—There is now no harbour here, as it has silted up. The roadstead is exposed to the S.W. monsoon, and a heavy sea sets in occasionally. During its prevalence steamers have to run to Makung Harbour, in the Pescadores.

Cargo is brought off in lighters, but only when the water is smooth, a

Japan—Anping (*continued*).

the surf on the bar is dangerous. Ships' boats are never used, landing being effected on catamarans.

Ballast is thrown overboard at a certain distance from the port.

The port is now being dredged.

Tonnage Dues.—See **Japan**.

AOMORI.

Aomori is in lat. $40^{\circ}46'$ N., long. $140^{\circ}41'$ E.

Population.—41,737.

Accommodation.—This is a new port, opened in April, 1906, for trade in all exports and certain imports. The anchorage is in 9 fathoms, three cables length from the shore, good holding ground open to the north. The prevailing winds in winter are W. to N.W., and in summer E. to S.E. They are strong enough at times to stop work, but not sufficient to endanger the anchorage. Discharging and loading is done by means of lighters.

Railway connection with Tokyo.

Charges same as in other Japanese ports.

FUSHIKI.

Fushiki is in lat. $36^{\circ}48'$ N., long. $137^{\circ}4'$ E.

Population.—8,500.

Imports.—Salt fish, fertilizer, etc.

Exports.—Salt, rice, cotton, and general goods.

Accommodation.—There is an anchorage here with off-shore winds on a bank which extends about a mile from the shore, in 6 fathoms. Vessels should not anchor with the lighthouse bearing westward of S.W., as the bank is very steep. Vessels up to 1,000 tons can enter the Emidzu River, which is kept constantly dredged by means of two dredgers, vessels loading and discharging on both sides of the river. Cargo is also loaded and discharged by means of lighters. High tide only rises 2 ft.

Pilotage.—Not compulsory. **Steamers** :—7 yen per vessel. **Sailing Vessels** :—2 yen per vessel. **Towage** :—3 yen per hour.

Port Charges.—**Light Dues** :—2 yen 50 sen. **Boat Hire** :—3 yen per day. **Ballast** :—56 sen per ton. **Entrance and Clearance** :—22 yen. **Labour** :—25 sen per man per day. **Brokerage** :— $2\frac{1}{2}$ per cent.

HAKATA.

Hakata, or Fukuoka, in lat. $33^{\circ}35'$ N., long. $130^{\circ}25'$ E., is on the E. shore of the Hakosaki-no-Ura.

Accommodation.—The bay is divided into two parts by an island ; the inner portion near the town is protected from any sea by this island, but is not recommended for vessels over 15 ft. draught. Vessels of larger draught can anchor outside this island, but are more exposed.

Expenses about the same as at Shimonoseki.

HAKODATE.

Hakodate, in lat. $41^{\circ}46'$ N., long. $140^{\circ}47'$ E., is situated on the north side of Tsugaru Strait ; it is the port of entry for the eastern portion of the Island of Hokkaido.

Japan—Hakodate (*continued*).**Population.**—89,000.**Imports.**—Fish, flour, oil, railway material, timber, and general merchandise.**Exports.**—Fish, furs, rice, salt, seaweed, railway sleepers, timber, sulphur, manganese, and coal.**Accommodation.**—The harbour limits are comprised within a line drawn from a point off the coast about half a nautical mile south of Anoma Point, to a point on the east bank of the mouth of the Arikawa, Kami-iso-mura. The roadstead is excellent, of easy ingress and egress, and well sheltered. The anchorage is in $5\frac{1}{2}$ fathoms, on good holding ground, with bottom of black mud and sand about $\frac{1}{2}$ mile off shore. A wood and iron pier 600 ft. long and 42 ft. broad is being constructed for the benefit of the Aomori steamers. Repairs, within the scope of Japanese workmen and materials, can be effected. There is a dry dock 480 ft. long on the blocks, 82 ft. wide at the entrance at high water spring level, and with a depth of $29\frac{1}{2}$ ft. on the sill at high water. The port is also equipped with a patent slip capable of taking vessels up to 1,200 tons. Fresh provisions, coal, and water may be obtained. Spring tides rise $3\frac{3}{4}$ ft.**Pilotage.**—Unnecessary. If taken, for charges see **Japan**.**Port Charges.—Tonnage Dues:**—5 sen per reg. ton, or 15 sen per reg. ton per annum. **Stevedore:**—Loading or discharging ordinary cargo. 30 sen per ton. **Labour:**—Ample coolie hire at reasonable rates. **Coal:**—There is generally a stock of 3,000 tons of Japanese coal on hand. This can be loaded in bags from lighters at the rate of 200 tons per day, or 350 tons per 24 hours. **Water:**—Fresh water is brought alongside in water-boats with pumps and hose fitted. **Provisions:**—Beef, fresh and dried fish, vegetables, firewood, etc., can be obtained in any quantity.**KAGOSHIMA.**Kagoshima is situated in lat. $31^{\circ}35'$ N., long. $130^{\circ}33'$ E., on the S. side of the Island of Kiusiu.**Population.**—60,235.**Imports.**—Bones, kerosene, manure, and oil-cake.**Exports.**—Timber, silk thread, tea, and charcoal.**Accommodation.**—There is a depth of $29\frac{1}{2}$ ft. at high water, and 18 ft. at low water. The railway through to Kagoshima is not yet finished.**Pilotage.**—Not compulsory.**Port Charges.**—There are no port charges, as trading vessels are not allowed to come to Kagoshima. All trading vessels are unloaded at Nagasaki, and the merchandise loaded into Japanese boats.**KAKOKO.**(See **Toko**, p. 1487.)**KARATSU.**Karatsu is in lat. $33^{\circ}27'$ N., long. $129^{\circ}59'$ E.**Accommodation.**—The anchorage is in 5 fathoms, sandy bottom $1\frac{1}{2}$ miles from the town, good shelter from all winds, except from N.W. N.E., when shelter can be had at Funagoshi Bay, 8 miles to the N.E.

A considerable trade is carried on here in coal and porcelain.

Expenses about the same as at Shimonoseki.

For pilotage rates, see **Japan**.

Japan.

KEELUNG.

Keelung, in lat. $25^{\circ}8' N.$, long. $121^{\circ}41' E.$, is on the N. coast of the island of Formosa.

Imports.—Opium, oil, cotton goods, woollen goods, metals, machinery, provisions, rice, flour, paper, pigs, tobacco, cigarettes, etc.

Exports.—Camphor, camphor oil, tea, coal, flax, hemp, hats, rice, sugar (raw), sulphur, etc.

Accommodation.—The inner harbour has now been dredged, and there is room for about three steamers of about 400 ft., and drawing not more than 24 ft. Steamers moor fore and aft, as there is practically no tide. There is no difficulty in entering the harbour. Wharves are now under construction and steamers will shortly be able to go alongside. When the harbour works are complete there will be a uniform depth of 30 ft. of water alongside the quays and in the anchorage. There is good holding ground, but considerable swell during N.E. gales. There is a pier 448 ft. long and 24 ft. wide, at both sides of which steamers can lie. The channel leading from the outer harbour to the pier is 400 ft. wide, with a minimum depth of 24 ft., and there is the same depth at the pier at low tide.

Trade, with the exception of the export of tea to the United States, is almost entirely with Japan.

Pilotage.—Pilots are always at hand.

Port Charges.—Tonnage Dues :—5 sen per net reg. ton, per voyage, or 20 sen per net reg. ton for one year. **Stevedorage** :—40 sen to 45 sen per ton, according to the nature of the cargo. **Tugboat** :—Usual charge 25 yen per day. **Coal** :—7 to 8 yen per ton. **Water** :—About $1\frac{1}{2}$ yen per ton. Provisions obtainable.

KOBÉ.

Kobé, or Hiogo, is in lat. $34^{\circ}40' N.$, long. $135^{\circ}0' E.$, and is situated on the N. shore of the Idzumi Nada.

Population.—322,131.

Imports.—Cotton, cotton piece goods, wool, woollen yarn, woollen piece goods, iron, iron bars, plates, etc., wire nails, machinery, chemicals, raw sugar, beans, rice and grain, kerosene, paraffin wax, oil cake, sulphate of ammonia, phosphate rock, dyes, artificial indigo, leather, paper, pulp for making paper, condensed milk.

Exports.—Cotton yarns and goods, matches, tea, camphor, fish oil, straw braid, matting, porcelain, rice, dried fish, and manufactured metals.

Accommodation.—Vessels moor off the town in from $3\frac{1}{2}$ to 5 fathoms of water in good holding ground, loading and discharging by means of lighters. There is a depth of 40 ft. at the outer limit of the port, and 20 ft. close in shore; tides rise and fall 6 ft. There is a pier 600 ft. long, with a depth of 24 ft. at high water at about 400 ft. from outer end, ordinary high springs, and 18 ft. at low water. There is also a Government pier, which is only used by vessels discharging Government materials. There are two patent slips, one 900 ft. long with a lifting power of 2,000 tons, and capable of taking a vessel of 600 tons; the other slip is also 600 ft. long, having a lifting power of 600 tons. There is a dry dock 407 ft. long, 64 ft. wide at entrance, and with a depth of 24 ft. on the sill at high water ordinary spring

Japan—Kobé (*continued*).

tides. Also two floating docks ; one 412 ft. 6 in. long, and the other 505 ft. long, with lifting power of 7,000 tons and 12,000 tons respectively.

Time Signals.—A red ball is hoisted on a white flagstaff at the Harbour Office at 11 h. 55 m. a.m., and dropped by electricity from the observatory at Tokyo at noon standard mean time of the 135th meridian east longitude. If the signal fails, letter W of the International Code is hoisted. A gun is also fired simultaneously with drop of ball, the signal being regulated by electricity transmitted from the Observatory at Tokyo. The signal is not made on Sundays or public holidays.

Pilotage.—Not compulsory. There is a European pilot licensed by the Japanese government who cruises at the entrance to the Ku Channel, the approach to the port.

Port Charges.—Tonnage Dues:—See Japan. **Pier Dues:**—According to the quantity of cargo landed or shipped : 10 c. up to 500 tons, with 5 c. for each additional ton over 500 tons ; minimum, 25 dols. Sometimes by special arrangement, a charge of 50 dols. is made, irrespective of the amount of cargo loaded or discharged. **Dock Dues:**—Charges for vessels using the docks and slips are always by arrangement. **Mooring:**—Buoy here is 7 yen per day. **Labour:**—Coolie hire on board averages 30 sen per ton. **Water:**—Fresh water pumped on board, 45 sen per ton for ship's use and boilers. **Ballast:**—Sand, 1 to 10 yen per ton ; shingle, 2 to 40 yen per ton. **Provisions:**—Fresh beef, 26 sen per lb. ; fresh pork, 24 sen per lb. ; salt beef for crew, 25 sen per lb. ; salt pork, 30 sen per lb. ; ship's biscuits, 11 sen per lb. ; potatoes, 2 sen per lb. ; vegetables, 5 sen per lb., according to the season of the year. **Commission:**—There is no fixed basis, such charges being always by previous arrangement.

Pro Forma Charges on a steamer of 1,200 tons reg., with part general cargo inwards from London via Suez, leaving with part general cargo for London via China ports :—

	Dols.	c.
Customs entrance fee	15	00
Compradore's bill, say	70	00
Consular fees (entry and clearance, 3 dols. 75 c. ; noting protest, 2 dols.)	5	75
Stevedore's bill, say, discharging, 14 c. per ton ; loading, 20 c. per ton	94	00
100 tons coal	350	00
Doctor's bill, medical attendance	8	00
Advertising	4	50
Customs clearance fee	7	00
Postage and petties	5	00
Telegrams	11	90
Pilotage, berthing	10	00
„ outward, via Inland Sea, say 150	150	00
	731	65 = £73 3s. 3d.

Pro Forma Charges on a barque of 1,000 tons reg., with cargo of kerosene inwards from New York, leaving with part cargo of tea for Yokohama, and thence to Port Moody :—

	Dols.	c.
Customs entrance fee	15	00
Pilotage inward, if incurred, say	50	00
Fee for surveying hatches	16	00
Carried forward	81	00

Japan—Kobé (*continued*).

	Dols.	c.
Brought forward	81	00
Customs fee, clearance	7	00
Consular fees, on entry and clearance	3	75
Stevedore's bill, discharging and loading, say	200	00
Compradore's bill	100	00
Doctor's bill	15	00
Postages and petties	3	00
	409	75 = £40 19s. 6d.

KOCHI.

Kochi, more properly called Port Urado, is in lat. 33°32' N., long. 133°33' E.

Population.—35,518.

Imports.—Grain and clothes.

Exports.—Japanese paper and silk thread.

Accommodation.—There is a depth of 16 ft. 5 in. at mean high water level, 12 ft. at mean low water level, and 9 ft. 2 in. at lowest level. There is a landing pier 351 ft. long and 18 ft. wide, connected by electric railway (gauge 3 ft. 6 in.), with Kochi City.

Pilotage.—Nil.

Port Charges.—There are no fixed port charges. **Ballast** :—About 1s. 6d. per ton. **Labour** :—About 3s.

KUCHINOTSU.

Kuchinotsu, in lat. 32°37' N., long. 130°11' E., is about 20 miles from Nagasaki.

Accommodation.—The anchorage outside is in 10 fathoms, mud bottom, with fair shelter except with strong southerly winds. The coal from the Miike Mines is shipped here.

Expenses about the same as at Shimonoseki.

For pilotage rates, see **Japan**.

KUSHIRO.

Kushiro, or Kusuri, in lat. 43°0' N., long. 144°22' E., is situated on the E. coast of the Island of Yezo.

Exports.—Timber, sleepers, fish, and seaweed.

Accommodation.—Only vessels of small size can obtain shelter here in 4½ to 5 fathoms, 2 cables off shore. Larger vessels anchor in 7 to 8 fathoms, sandy bottom, half a mile from east shore, and would have no shelter from winds between E. round S. to N.W.

It is proposed to construct a harbour here in the near future, and the works in connection therewith will consist of a breakwater 4,705 ft. long, running west and north-west, from the southern end of the town, and a retaining wall, 6,550 ft. long, to prevent the silting up of the harbour by the Kushiro River. The total area of the harbour will be 500,000 tsubo (nearly 410 acres), of which 130,000 tsubo are to be dredged to a depth of 16 ft. When the works are completed, Kushiro harbour, which is at present much exposed to southerly gales in spring and summer, will be safe at all times of the year for ships up to 4,000 tons.

Tonnage Dues :—See **Japan**.

Japan.**MAKYU.**(See **Toko**, p. 1487.)**MISUMI.**

Misumi, in lat. $32^{\circ}38'$ N., long. $130^{\circ}28'$ E., is in the province of Higo, on the W. coast of Kiusiu Island.

Accommodation.—There is good anchorage in 6 to 12 fathoms. There is a quay here.

Expenses about the same as at Shimonoseki.

For pilotage rates, see **Japan**.

MOJI.

Moji, in lat. $33^{\circ}57'$ N., long. $131^{\circ}0'$ E., is situated on the south side of the Shimonoseki Straits.

Population.—38,065.

Export.—Coal.

Accommodation.—There is good anchorage in 5 to 7 fathoms, 2 cables from the shore. There are now three mooring buoys laid down at the eastern end of the harbour, to which steamers may moor. Cargo is loaded by means of lighters, the average rate of loading being from 800 to 1,000 tons per day. Moji is an open port of entry and is also a coaling port.

Waterworks are in course of construction, and an electric railway is also in course of construction between Moji and the neighbouring cities.

Pilotage.—See **Japan**.

Port Charges.—Tonnage Dues.—See **Japan**. **Agency Fee:**—25 yen. **Stevedore Charges:**—Discharging or loading general cargo, 30 sen per ton; shifting cargo, 10 sen per man per hour; cleaning holds, 10 sen per man per hour; winchmen, 12 sen per man per hour; overtime after Customs hours, 10 sen per man per hour; overtime, European foreman, 50 sen per hour. Tallymen, 2 yen 50 sen per man per day. **Loading Coal:**—Shore to lighters, 53 sen; lighterage, 50 sen; lighter into holds and for bunkers, 1 yen; trimming, 10 sen; towage, 10 sen. Boat hire for coal, 1 yen per day for lighters of 50 tons capacity. **Water:**—50 sen per ton. Fresh provisions can be obtained at moderate prices.

Pro Forma Charges on a steamer of 2,261 net tons:—

	Yen	sen.
Telegram to owners, three words at 2 yen 82 sen	8	46
Tonnage dues, 2,261 tons, at 5 sen	113	05
Cash to captain	100	00
Customs Sunday permit	20	00
Commission on charter, Moji-Hong Kong—		
5,208 tons at 2 dols. 30 c. = 11,978 dols. 40 c.		
At $2\frac{1}{2}$ per cent. = 299 dols. 46 c., at 92	275	50
Advance to fireman, £12 10s., at $2\frac{1}{2}$	122	45
Agency fee	25	00
Compradore's account	140	35
Consular fee (endorsement of agreement), 2s. 6d.	1	25
„ „ (clearance), 10s.	5	00
„ „ (clearance), 5 desertions, 10s.	5	00
„ „ (clearance), 6 engagements, 12s.	6	00
Telegram to owners, three words at 2 yen 82 sen	8	46
Inward pilotage account	27	25
Outward pilotage account	36	25
Postages and petties	1	72

895 74 at 2s. $0\frac{1}{2}$ d. = £91 8 9
452 tons bunkers, at 13s. per ton 293 16 0

Japan.

MURORAN.

Muroran, in lat. $42^{\circ}22'$ N., long. $141^{\circ}1'$ E., is a fine natural harbour on the N.E. point of Volcano Bay, opening on to the Pacific Ocean.

Population.—9,415.

Imports.—General merchandise in small quantities, iron manufactures, and building materials.

Exports.—Coal, iron ore, steel, briquettes, cereals, timber, seaweed, etc.

Accommodation.—Muroran has a fine natural harbour, the third largest in Japan, but unfortunately it is exposed to the N.W. gales which blow throughout the winter, and large portions of it are extremely shallow and are silting up. To remedy this a breakwater across the mouth of the harbour and a pier 1,500 ft. long are to be built. The anchorage is in $4\frac{1}{2}$ to 6 fathoms, about a mile from the shore. Coal is loaded by lighters into vessels at the anchorage at the rate of 4,000 to 5,000 tons per day. Owing, however, to the high cost of coal at this port, many vessels trading across the North Pacific show a tendency to call at Moji for bunker coal in preference to putting in here. Steamers calling for coal here should on entering the port blow three blasts on the whistle. On receiving this signal officials from the colliery company's office will visit her immediately, whether previous notice of her coming has been given or not, and will attend to all needful processes, such as obtaining a Customs permit, etc. When the steamer leaves the port, three blasts of the whistle should similarly be given. Coal is loaded by means of winches, which should be ready for use immediately on anchoring. While a steamer is in port she should keep two anchors down. If one only be used, there is a possibility that the coal-lighters may strike the propeller, as the stern of the steamer is liable to swing, should there be any sea. Spring tides rise 6 ft.

Port Charges.—The only charge is the tonnage dues, which are the same as in all other ports in Japan. **Mooring** :—5 sen per net reg. ton.

Provisions :—Fresh provisions and bullocks can be obtained.

NAGASAKI.

Nagasaki, in lat. $32^{\circ}45'$ N., long. $129^{\circ}53'$ E., stands at the head of the bay of the same name.

Population.—153,290.

Imports.—Manufactured goods, iron, steel, piece goods, sandal-wood, timber, tin, lead, and various articles of general merchandise.

Exports.—Sulphur, isinglass, paper, coal, vegetable wax, gall nuts, copper, dried fish, sea-slugs, seaweed, peas, beans, camphor, plumbago, crockery, planks, rape-seed, rice, matting, wheat, and flour.

Accommodation.—The inner harbour lies N.E. by N., and is easy of entrance at all times. The anchorage within the three fathom line is about 2 miles long, and 2 cables wide at the entrance, increasing to $\frac{1}{2}$ a mile wide inside the harbour. Strong mud holding ground. The depth at low water is 14 fathoms at the entrance, diminishing to 5 fathoms near the head of the harbour. Rise and fall of springs, $10\frac{3}{4}$ ft.; neaps, 7 ft. The outer harbour is extensive and forms a good and well-sheltered anchorage. Northerly winds prevail in winter; the severest storms occur early in Sep-

Japan—Nagasaki (*continued*).

tember. There are no quays, but heavy weights are discharged at the dock-yard by the company's 100-ton sheer legs. Lighters are required to convey cargo to the wharf. The harbour limits are comprised within a line drawn from Kanzaki to Megami. There are three granite docks :—

	No. 1 dock.	No. 2 dock.	No. 3. dock.
Extreme length	525 ft.	371 ft.	722 ft.
Length on keel blocks	510 „	360 „	714 „
Width of entrance, top	88½ „	66 „	96 „
Width of entrance, bottom	76 „	53 „	88 „
Water on sill at ordinary spring tide	26½ „	23 „	34 „

There is a patent slip capable of lifting vessels up to 1,200 tons gross. The engine works are well equipped with the latest and most improved plant and appliances for undertaking building or repairing ships, engines and boilers, and also electrical work of highest workmanship and material. All materials supplied at moderate charges. Licences are held to make and supply Parsons' marine steam turbines, turbo-generators, and Stone's manganese bronze castings. There are seven building berths, ranging from 185 ft. to 700 ft. There are also appliances for lifting and discharging heavy weights as follows :—Sheer legs up to 80 tons, sheer legs on wharf up to 100 tons. Coal of good quality is procured in the immediate neighbourhood, and bunker coal to any amount can always be obtained with the quickest dispatch. Frequently steamers can secure coal cargoes for Chinese ports, Singapore, etc. Stock of Admiralty Welsh coal is always kept, and can be loaded at the rate of 800 tons by day, or 1,200 tons working day and night. Labour cheap and plentiful. Fresh beef, 24 sen per lb.; vegetables and fish at moderate prices. Coal 8 to 10 yen per ton.

Time Signals.—Chronometers can be checked. A red flag is hoisted half-mast on a flagstaff, just below a conspicuous white building with pyramidal tower on the crest of the hill above the town, at 11.55 a.m., close up at 11.58 a.m., and dipped suddenly at noon Japanese standard mean time, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 23 h. 39 m. 28 s. local mean time. A gun is fired simultaneously.

Pilotage.—Not compulsory. 30 yen for sailing vessels, and 20 yen for steamers, either inwards or outwards, with an increase of 3 per cent. for every foot of draught above 12 ft., and a further increase of the same amount for every 1,000 tons gross or fraction thereof over 1,000 tons.

Port Charges.—Tonnage Dues :—5 sen per reg. ton for each entry, or 15 sen per ton clears for one year. **Stevedoring** :—General merchandise, 30 sen; coast cargo, 24 sen per ton. **Consular Fees** :—6.25 yen.

Towage :—80 yen for a vessel of 2,000 tons gross. **Use of Mooring Buoy** :—7 yen per 24 hours. **Lighterage** :—1.50 yen per lighter per day. **Sampan Hire** :—1 yen per day; 65 sen per half-day. **Ballast** :—75 sen per ton of shingle or sand; 45 sen per ton, if mud. **Labour** :—1 yen per man per day.

Water :—50 sen per ton f.o.b. **Usual Merchant's Charges** :—General charge for services, 50 to 125 yen; commission on charter, freight, or passengers, 5 per cent.; commission on disbursements, 2½ per cent.; commission on freight collected, 1 per cent.

Charges for dry docking :—

For docking, painting and cleaning, including 24 hours dockage.

For vessels of 2,000 gross tons	54 sen per ton.
„ „ 3,000 „ „	50 „ „
„ „ 4,250 „ „	47 „ „
„ „ above 4,250 „ „	47 „ „

For a longer period than 24 hours, rates will be quoted on application.

Japan—Nagasaki (continued).

Pro Forma Charges on a vessel of 5,091 tons gross (3,306 tons net) :—

	Yen	sen.
Tonnage dues, at 5 sen per ton	165	30
British Consular fees	6	25
Pilotage inwards, 20 ft. draught	27	80
Pilotage, outwards, 20 ft. draught	27	80
Buoy hire	3	00
Stevedore, discharging 250 tons home cargo, at 30 sen	75	00
Stevedore, loading 200 tons coast cargo, at 24 sen	48	00
Advertisement : notice to consignees	2	00
Water, 50 tons at 50 sen	25	00
2½ per cent., on disbursements; 380 yen 15 sen at 2½ per cent.. . . .	9	50
Agency fee	75	00
Postages and petties	2	35

467 00 = £47 13s. 5d.

NIIGATA.

Niigata is in lat. 37°54' N., long. 139°0' E.

Population.—59,576.

Owing to the difficulties in crossing the bar, all foreign commerce has deserted Niigata. Occasionally a vessel loads with rice, otherwise all coast trade is in Japanese hands.

OSAKA.

Osaka, in lat. 34°40' N., long. 135°30' E., is situated on the N.E. shore of the Osaka Gulf, at the mouth of the Aji River.

Population.—1,172,138 natives, and 641 foreign residents.

Imports.—Cotton, wool, silk yarn, hides, sugar, rice, hemp, beans, flax, etc.

Exports.—Copper, cotton yarn, cotton goods, stationery, matches, sake, paper, refined sugar, umbrellas, etc.

Accommodation.—There is a bar at the entrance to the river. Vessels of 10 ft. draught can ascend as far as the town wharf, where the draught varies from 10 ft. 5 in. to 13 ft. 11 in. at low water; vessels of larger draught and nearly all foreign going vessels anchor in the new harbour, constructed at the mouth of the Aji River. Depth inside the harbour varies from 19 ft. to 28 ft. at low water; spring tides rise 6 ft., neap tides 3 ft. The work in connection with the new harbour is not yet completed, but certain portions are open and being utilised by ocean going vessels. The harbour, which can accommodate ten vessels, is divided into two sections—the inner and outer harbours. The outer harbour is enclosed by two breakwaters, north and south, 8,952 and 11,130 ft. long respectively, the entrance being 600 ft. wide. The inner harbour is enclosed with a wall which starts at the mouth of Kidzu River and stretches 1,980 ft. north-westward, and thence projecting slightly northward 3,480 ft., reaches the starting point of the south breakwater. There is an iron pier 1,500 ft. long and 90 ft. wide in the outer harbour. Cargo is usually loaded and discharged by means of lighters, but since January, 1909, two wooden piers at Sakurajima (within the harbour), have been available, and here steamers of 2,000 to 3,000 tons can moor alongside and discharge or load cargo directly from or to the warehouse. General cargo can be loaded or discharged at the rate of 800 to 1,000 tons per day.

Japan—Osaka (*continued*).

Osaka is connected with the trunk line of railway, which runs through the main island and also with four other local railways.

There are several dry docks in Osaka, but they are all small ones. The largest one is 286 ft. long, with a width of 79 ft. and a depth at high water of 12·42 ft. Ships' repairs can be undertaken, as there are several foundries and engineering works.

Pilotage.—Not compulsory. For tariff see **Japan**.

Port Charges.—Tonnage Dues :—5 sen per ton net reg. for each entry, or 15 sen per ton net reg., paid once a year. **River Dues** :—A local due of 5·7 sen per net reg. ton is levied upon vessels ascending the river to the town. **Stevedore** :—General cargo and cereals, 14 to 15 sen per ton; timber, about 22 sen per ton. **Boat Hire** :—4 yen to 10 yen per boat. **Ballast** :—About 20 yen per 6 cubic feet (pebble). **Labour** :—47 to 70 sen per day. **Brokerage** :—Generally 5 per cent. for chartering. **Buoy Dues** :—4 yen per day if the buoy is used. **Provisions** :—Potatoes and fish, 17 sen per lb.; bread, 6·5 sen; chickens and pork, 22 sen per lb.; beef, 24 sen per lb.; eggs, 27 sen per 100. **Water** :—27 sen per ton for drinking, and 26 sen for boiler, f.o.b.

OTARU.

Otaru, in lat. 43°13' N., long. 141°0' E., lies on the western shore of Hokkaido.

Population.—About 79,361.

Imports.—General merchandise, railway building materials, and salted salmon.

Exports.—Coal, sulphur, placer gold and silver, lumber, timber, etc.

Accommodation.—Otaru, the port of shipment for the coal produced by the companies working the seams in the Ishikari, has a fine natural harbour, well sheltered and with good holding ground. A breakwater 4,250 ft. long, enclosing an area of 1,666 acres, provides excellent anchorage in 4½ to 5 fathoms. Here during 9 months of the year a large number of steamers can ride at anchor and discharge and load cargo in perfect safety. During the three summer months, whenever the wind is in the east, a choppy sea is raised, which, while sufficient to stop the working of cargo, is not enough to cause serious trouble to the shipping in the anchorage or to endanger it in any way. In order to provide for the constantly increasing traffic, the harbour is to be greatly improved, and when the works are completed it will be one of the most convenient in Japan for handling cargo. The scheme comprises the building of a second breakwater running out from the southern end to meet the present breakwater and leaving only a narrow entrance in the centre. This will make the harbour perfectly safe at all times of the year and in all conditions of weather, and will afford accommodation for 120,000 tons of shipping at one time in from 5 to 8 fathoms. The whole foreshore to the extent of about 170 acres is to be reclaimed, and three new piers, having a length of 936, 600, and 498 ft. respectively, built. A private company has also been formed to construct a dry dock at Umayu, close to the land end of the existing breakwater. There is at the present (1908) a small shipbuilding yard, which can turn out sailing vessels up to 300 tons, and steamers up to 200 tons. The British acting Vice

Japan—Otaru (*continued*).

Consul at Hakodate in his 1908 report says that the company controlling this shipyard have applied for permission to construct a floating dock, the dimensions of which will be—length, 220 ft. ; breadth, 110 ft. ; and depth 34 ft.

Pilotage.—Unnecessary.

Port Charges.—Tonnage Dues :—5 sen per reg. ton, or 15 sen per reg. ton per annum. **Towage** :—This may be obtained at agreed rates.

Ballast can be provided. **Labour** :—Same as at Hakodate. Vessels can load 3,000 to 4,000 tons of coal per day. **Provisions** :—Fresh provisions can be obtained in limited quantities.

PORT LLOYD.

Port Lloyd, in lat. 27°4' N., long. 142°11' E., is situated on the W. side of Peel Island, the chief island of the Bonin Group.

Population.—5,000.

Accommodation.—There is a depth of 26 fathoms of water at the deepest part, and the port is well sheltered by precipices, affording shelter to the largest vessels lying at anchor. Vessels can be hove down and repaired ; whalers and vessels sailing between Japan and the southern islands frequently call for provisions, which are plentiful. Excellent fresh water can be obtained. A submarine cable, through which cablegrams can be sent to any place, was laid down in 1906 between Guam and Peel Island.

Provisions :—Turtles, pigs, goats, fowls, fish, potatoes, onions, and yams can be had, and pumpkins, water melons, and Indian corn are abundant in their season. Potatoes cost 1½ c. per lb. ; yams, 1 c. per lb. ; onions, 2 c. per lb. ; pumpkins, 3½ c. each ; water melons, 7½ c. each ; melons, 1½ c. each ; Indian corn, 80 c. per bushel ; cattle, 25 dols. each ; pigs, 5 dols. ; goats, 1½ dols. ; fowls, 30 c. ; and eggs, 1 dol. 25 c. per 100.

SAKAI.

Sakai is in lat. 34°36' N., long. 135°29' E.

Population.—54,040.

Imports.—Beans, fish, fish manure, sugar, etc.

Exports.—Wood, rice, and cotton goods.

Accommodation.—There is a depth of 19 ft. 3 in. at spring tides, and 18 ft. 9 in. at neap tides. Depth at lowest spring tides, 18 ft.

Pilotage.—Not compulsory. Steamers and sailing vessels, 30 yen in, and the same out. **Towage** :—20 yen.

Port Charges.—Tonnage Dues :—5 sen per reg. ton. **Boat Hire** :—For mooring, 30 yen, and the same for unmooring. **Labour** :—70 sen per man per day. **Ballast** :—Free. **Brokerage** :—3 per cent.

Pro Forma Charges on a steamer of 800 tons reg., with a cargo of general merchandise, drawing 12 ft. loaded :—

	Yen	sen.
Pilotage inwards	30	00
„ outwards	30	00
Tonnage dues	40	00
Boat hire, mooring and unmooring	60	00
Labour, 3 men for 2 days	4	20

164 20 = £33 2s. 10d.

*Japan.***SHIMONOSEKI.**

Shimonoseki, in lat. $33^{\circ}59'$ N., long. $130^{\circ}55'$ E., is situated on the north side of the Shimonoseki Straits.

Population.—46,285.

Accommodation.—The anchorage is well below the Custom House, in 6 to 10 fathoms, out of the tides, which are very rapid through the narrows, with strong eddies along the shore during the western stream. Loading and discharging is done by means of lighters.

Shimonoseki is now an open port of entry.

Pilotage.—For rates see **Japan.**

Port Charges.—Tonnage Dues.—See **Japan.** **Lighterage** :—11 to 15 sen per ton. **Hospital Charges** :—1 yen 50 sen to 3 yen per day. **Ship-broker** :—Entrance and clearance, 75 yen. **Stevedore** :—Loading, 25 sen per ton; discharging general cargo, 25 sen per ton. **Customs Fees** :—Special opening, day, 10 yen; night, 20 yen; Sunday work and holidays, day, 2 yen per hour; night to midnight, 4 yen; afterwards, 6 yen. **Tally Clerks** :—1 yen 50 sen per day; night, 50 per cent. extra. **Labour on Cargo** :—Coolies, 75 sen per day of 12 hours; sunset until sunrise, 50 per cent. extra.

Beef, vegetables, and fruit can be obtained at moderate prices. Good water can also be obtained. Coal can be had here, but it is not of good quality.

TAKAMATSU (Shikoku).

Takamatsu is in lat. $34^{\circ}20'$ N., long. $134^{\circ}4'$ E.

Population.—37,430.

Imports.—Machinery, clothes, nails, woollens, sugar, paper, bicycles, petroleum, coal, copper, iron, timber, etc.

Exports.—Rice, straw plaits, salt, raw sugar, iron wares, etc.

Accommodation.—There is a depth of 20 ft. at high water, $18\frac{1}{2}$ ft. at low water, and 14.9 ft. at lowest spring tides.

Port Charges.—Entrance Fees :—1 sen per package. **Clearance Fees** :—1 sen per package. **Ballast** :—10 yen per ton. **Labour** :—60 sen per day.

TAKAU.

Takau is in lat. $22^{\circ}35'$ N., long. $120^{\circ}17'$ E.

Imports.—Metals and cotton, and woollen goods.

Exports.—Sugar and rice.

Accommodation.—There is 10 to 11 ft. water over the N. and S. parts of the bar at low water springs, but the bar is constantly changing. Springs rise 4 ft. Steamers do not enter the port, but anchor outside in $5\frac{1}{2}$ fathoms, and loading and discharging is done by means of lighters, which have a carrying capacity of from 40 to 50 tons. No vessel drawing more than 10 ft. should attempt to enter.

The port is now being dredged, and it is the Government's intention to dredge to a depth to enable steamers drawing 22 ft. to enter. The roadstead is dangerous during S.W. monsoons.

Japan—Takau (*continued*).

Port Charges.—Stevedores :—Rates vary from 8 yen per 1,000 bags of sugar (100 catties in weight) to nearly double that for heavy machinery. Launches are available for towing lighters ; charges according to size of launches. **Tonnage Dues.**—See **Japan**. Chartering vessels, 5 per cent.

TAMSUI (Formosa).

Tamsui is in lat. $25^{\circ}11' N.$, long. $121^{\circ}25' E.$

Population.—About 6,000.

Accommodation.—There is a bar across the entrance of the harbour, which is continually shifting. The depth of water on the bar at high tide ordinary springs is 13 ft. 6 in. ; inside the depth increases to $3\frac{1}{2}$ fathoms. Springs rise 7 to 10 ft. The anchorage off the harbour is unsafe, as the holding ground is not good, and a vessel with a good scope of cable out is likely to drive, even in moderate weather. Vessels load and discharge by lighters. There is mooring room for three vessels of 13 ft. draught and for several of 10 ft. draught.

Pilotage.—No vessel should enter without a pilot. One can generally be obtained off the port. Regular steamers of 1,000 tons or above, 26 yen, in and out ; other steamers, 30 yen.

Water is brought off in sampans at $1\frac{1}{2}$ dols. per ton. The trade of this port has fallen off very much since the Japanese occupation, owing to its having been diverted to Japan.

TATEYAMA.

Tateyama is in lat. $35^{\circ}0' N.$, long. $139^{\circ}52' E.$

Population.—10,000.

Imports.—Sugar, petroleum, rice, wool, and general merchandise.

Exports.—Whale-oil, skins, etc.

Accommodation.—There is a depth of 11 fathoms at high water, and of 10 fathoms at low water. Vessels of about 2,000 tons can secure anchorage.

TOKO, TOSEKI, MAKYU, AND KAKOKO.

Toko, Toseki, Makyu, and Kakoko, in South Formosa, were opened to foreign trade in 1899, but only Chinese junks may enter and clear at these ports, and vessels other than Chinese or Japanese may not import or export cargo without special permission from the Governor-General, unless chartered by Japanese subjects.

TSURUGA.

Tsuruga is in lat. $35^{\circ}39' N.$, long. $136^{\circ}8' E.$

Population.—17,067.

Imports.—Beans, bean-cake, petroleum, fish manures, wheat, cotton goods, clothes, oranges, etc.

Exports.—Leather, shoes, paper, beer, stockings, glass-ware, straw hats, vegetables, fruits, etc.

Accommodation.—There is a depth of 35 ft. at high water, and of 33 ft. at low water. Railway connection with Kyoto, Kobé, Osaka, Nagoya, Tokio, etc. The railway also runs along the breakwater here.

Japan—Tsuruga (*continued*).

Port Charges.—Tonnage Dues.—See **Japan**. **Towage** :—About 15 yen per hour ; very rarely necessary. **Ballast** :—55 to 70 sen per ton in summer ; in winter 65 to 80 sen per ton. **Coolie Hire** :—70 sen per coolie (working from 7 a.m. till 5 p.m.). **Brokerage** :—15 sen per ton. **Lighterage** :—30 sen per ton. **Transportation Charges** :—Taking goods from store and putting on vessel, or from store and loading on train, 20 sen per ton.

Pro Forma Charges on a steamer of 5,000 tons register, with a cargo of 3,000 tons in and ballast out :—

	Yen.
Tonnage dues at 5 sen per reg. ton	250
Brokerage, 15 sen per ton	450
Lighterage, 30 sen per ton	900
Transportation charges, at 20 sen per ton	600
Ballast, 1,000 tons at 70 sen per ton	700

2,900 = £296 0s. 10d.

WAKAMATSU.

Wakamatsu, in lat. 33°56' N., long. 130°48' E., is situated on the northern coast of the Island of Kiushiu, about 11 miles W. of Moji.

Population.—32,534.

Imports.—Iron ore, bean cake, rice, eggs, etc.

Exports.—Coal, coke, iron, steel, bricks, etc.

Accommodation.—The harbour comprises a water area included between an arc of a circle of 2 miles radius, with the Wakamatsu lighthouse as the centre on one side, and a straight line drawn to the N.N.W. from the eastern bank of the Hirano River mouth on the other. The harbour is divided into three sections : (1) the inner harbour, (2) the main harbour, and (3) the outer harbour. Dredging operations have secured a depth of 18 ft. at extreme low water for the greater part of the main harbour, and a fairway throughout the outer, main, and inner harbours ; in the middle of this fairway a depth of over 20 ft. has been secured. The port authorities hope by further dredging to make this the uniform depth. The anchorage is generally good, the bottom being mostly composed of a thick layer of sand, but in one or two places it consists of clay and mud, conglomerate and rock. There are a number of mooring buoys in the main harbour, and wharf accommodation with not less than 18 ft. alongside in the inner harbour.

Harbour Regulations.—Vessels are strictly forbidden to anchor within the specified fairways, with the following exceptions :—

1. Vessels engaged in the harbour improvement works.
2. Vessels engaged in salvage works.
3. Vessels engaged in raising sunken vessels.
4. Vessels disabled.

The above-mentioned vessels (except small sailing vessels, crafts, and launches below 10 tons) while remaining in the fairways shall carry the lights or signals required by the law, relating to the prevention of collisions at sea.

Every vessel (above 1,000 kokus in case of sailing vessels and above 100 tons in case of steamers) having arrived, the master or his representative shall report in writing to the police office, giving a description of the vessel, name of owner, nationality of vessel, port of registry, gross tonnage, register tonnage, first port of departure and date, and the ports called at on the way. He shall also report in writing before leaving the harbour, about the date

Japan—Wakamatsu (continued).

and hour of departure and the destination. Vessels plying regularly need produce the above reports on the first occasion only.

Every vessel (above 100 tons) on entering the port shall, when nearing the breakwater, hoist its ensign and signal letters at day time, or blow three long whistles at night. Regular mail steamers may hoist the company's flag in lieu of the signal letters. The ensign and signal letters or company's flag must not be lowered until the vessel's arrival shall have been duly reported to the police office. Any steamer about to depart shall notify to the police office, and hoist the Blue Peter.

Vessels in the harbour are forbidden to blow whistles unless on proper occasions. Every vessel entering the port shall turn in yards, rig in jib-booms, fix up boats in such manner that no obstruction is offered to other vessels, and shall be provided with two main anchors and one reserve at her stern.

No ballast, ashes, sweepings, etc., must be thrown overboard within the harbour limits. Whilst taking in or discharging coal, ballast or other similar materials, the necessary precautions are to be taken to prevent their falling into the sea. Any material detrimental to the harbour, either thrown overboard, or allowed to fall in through negligence, must be removed by the ship or her owner without delay.

No chains, ropes, or other gears are to be attached to any light-ship, light-house, signal buoy, or marking post.

In case of fire breaking out on board a ship within the harbour limits, the ship's bell shall be rung until assistance arrives, and the signal letters "N.M." be hoisted if at day time, or a red lantern be alternately hoisted and lowered if at night.

Any vessel carrying explosives or highly inflammable materials in excess of ordinary requirements must anchor in the outer harbour, without obstructing the fairway. She may remove to some other spot, after obtaining a special permission thereof from the police office. Such vessels within the harbour limits shall, during the daytime, fly at foremast head the signal letter "B," and at night hoist in the same place a red light. The term "explosives" shall mean blasting gelatine, cartridges, detonators, dynamite, fireworks, smokeless powder, primers, gelignite, nitro-glycerine, gunpowder, gun cotton, caps, etc. The term "highly inflammable materials" shall mean crude petroleum (including Burma oil, Rangoon oil, and rock oil), kerosene, naphtha, turpentine, ether, benzole, benzine, acetone, spirit, carbon bisulphide, and all such materials as produce inflammable vapour at a temperature not exceeding 95° F.

Pilotage.—Optional. If taken, then according to Government tariff. Pilots may be obtained at Rokuren, the western entrance to the Straits of Shimonoseki, or at Hesaki, the eastern entrance, at which places quarantine inspection is made. For tariff, see **Japan**.

Port Charges.—Harbour Dues:—Sailing vessels, either national or foreign, loading coal:—

Amount of coal.		Per 10,000 kins (about 6 tons).	
Not exceeding 100,000 kins (about 60 tons)			6 sen.
" " 200,000 " " 120 "			9 "
" " 300,000 " " 180 "			12 "
" " 400,000 " " 240 "			15 "
" " 500,000 " " 300 "			18 "
" " 600,000 " " 360 "			24 "
Exceeding 600,000 "			30 "

Japan—Wakamatsu (continued).

Steamers and tugs, loading coal, grain, or general cargo :—

Amount of cargo.		Per ton.
Not exceeding	100 tons	3 sen.
" "	200 "	5 "
" "	300 "	7 "
" "	400 "	9 "
Exceeding	400 "	10 "

Note.—Harbour dues are charged on vessels with cargo both on entering and on clearing the harbour, in accordance with the rates indicated above. Dues representing one-third of those prescribed above are charged on vessels at their departure, when they enter and clear without any cargo. Dues corresponding to the amount of cargo loaded in the harbour are charged on vessels loading and discharging a portion of their cargo, in accordance with the rates prescribed. When dues are charged on vessels entering the harbour, no further dues are charged at clearance, should the vessels depart without discharging any portion of their cargo.

Tonnage Dues.—See **Japan. Anchor Buoys** :—7 yen per day. **Boat Hire** (sampan) :—1 yen per day. **Ballast** :—Cannot be had unless ample notice is given ; cost 75 sen per ton. **Stevedore** :—Discharging iron ore, 20 sen per ton. **Labour** :—Coolies, 60 to 75 sen per man per day. **Brokerage** :—25 yen per steamer for entering and clearing.

Pro Forma Charges on a steamer of 987 tons register, with a cargo of iron ore in, and ballast out, drawing 19 ft. 6 in. loaded :—

	Yen	sen.
Harbour dues at 10 sen per reg. ton	98	70
Brokerage	25	00
Pilotage in, 31 yen ; out, 25 yen	56	00
Tonnage dues at 5 sen per reg. ton	49	35
Stevedore's account at 20 sen per ton on iron ore (2,200 tons)	440	00
	669	05 = £68 6s. 0d.

YAWATA.

Yawata is in lat. 35°30' N., long. 140°5' E.

Population.—4,341.

Imports.—Liquors and manure.

Exports.—Rice, wheat, and fuel.

Accommodation.—There is a wooden jetty here 1½ miles in length, with a depth alongside of 6 ft. at high water and 2 ft. at low water.

YOKKAICHI.

Yokkaichi is in lat. 34°58' N., long. 136°36' E.

Accommodation.—The anchorage for large vessels is with the lighthouse bearing W.N.W., distant 1½ miles, in 5 to 5½ fathoms, soft mud. The depths decrease inshore gradually to 3 fathoms, 6 cables from the lighthouse. The anchorage is exposed to S.E. and S. winds, which bring in a heavy sea. Cargo is loaded and discharged by means of lighters.

Pilotage.—See **Japan**.

Port Charges.—For **Tonnage Dues**, see **Japan**. Other expenses same as at Shimonoseki, except **Lighterage**, which is 6 to 7 sen per ton.

Japan.

YOKOHAMA.

Yokohama, in lat. $35^{\circ}26' N.$, long. $139^{\circ}37' E.$, is one of the most important ports in Japan, and is the port of Tokyo, the capital.

Population.—330,000.

Imports.—Cotton yarn, woollen and cotton piece goods, sugar, kerosene, general merchandise, silver, specie, rice, metals, drugs, clothing, books, flour, wheat, phosphate rock, bean cake, etc.

Exports.—Tea, silk, cotton yarn and piece goods, flax, tobacco, oil, timber, seaweed, copper, dried fish, bamboo and lacquer ware, porcelain, coal, fans, copper ore, paper, peanuts, straw braid, lily bulbs, manganese, etc.

Accommodation.—The harbour is protected by breakwaters having an entrance between their heads of 800 ft., with a depth inside ranging from 6 to 35 ft. at low water; spring tides rise $7\frac{1}{4}$ ft.; neaps, $4\frac{1}{4}$ ft. There is a pier 1,895 ft. long in the harbour, with 26 ft. at the outer end, having truck lines connected with the Custom House. There are three dry docks: No. 1 Dock, 515 ft. 9 in. long, with a width of 91 ft. 2 in. at the entrance at high water ordinary springs; depth on sill at high water ordinary springs, 29 ft. $10\frac{1}{2}$ in.; depth at high water ordinary springs on block, 28 ft. 8 in. No. 2 Dock (to be completed in 1909) is 376 ft. 5 in. long; breadth of entrance at high water ordinary spring level, 58 ft. 8 in.; depth on sill, 27 ft. 3 in.; depth on block, 26 ft. 1 in. No. 3 Dock (which is still in course of construction) is 481 ft. 1 in. long; breadth of entrance at high water ordinary spring level, 66 ft. 10 in.; depth on sill, 22 ft. $10\frac{1}{2}$ in.; depth on block, 21 ft. $4\frac{1}{2}$ in. There is also a wet dock 477 ft. $2\frac{1}{2}$ in. long, with a depth of 26 ft. 10 in. at low water springs. There is a floating derrick capable of lifting 40 tons, and repairs of all kinds can be done under European supervision.

Time Signals.—A black ball is hoisted on the white mast of the eastern hatoba at 11 h. 55 m. a.m., and dropped by electricity from the observatory at Tokyo at 0 h. 0 m. 0 s. standard time of the 135th meridian east longitude, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 0 h. 18 m. 36 s. of local mean time.

Pilotage.—Not compulsory. Inwards:—Steamers drawing up to 12 ft., 20 yen, plus 60 sen for every foot over 12 ft., and plus 60 sen per 1,000 tons gross on tonnage over 1,000 gross reg. tons. Outwards:—The same rates. Sailing vessels:—45 yen on 12 ft. (minimum), plus 1 yen 35 sen per ft. over 12 ft., and plus 1 yen 35 sen per 1,000 tons over 1,000 gross reg. tons. **Towage.**—50 yen per tug. No towage is required unless the vessel is disabled.

Port Charges.—Tonnage Dues (including entrance and clearance at Customs):—5 sen per net reg. ton for each call, or one payment of 15 sen per net reg. ton for 12 months. **Mooring.**—1 yen, paid to the pilot. **Wharfage.**—If the pier is used, 2 sen per net reg. ton for the first twenty-four hours, and 1 sen per ton for every additional 24 hours. **Boat Hire.**—1 yen 50 sen for sampan per day; steam launch, 30 yen for any period. **Agency Fee.**—Attending to ship's business, usually £10 10s. **Brokerage.**—Collecting inward freight, $\frac{1}{2}$ per cent.; disbursements, if with cash in hand, 1 per cent.; if without cash, $2\frac{1}{2}$ per cent.; obtaining outward charter, 5 per cent.; collecting outward freight, $\frac{1}{2}$ per cent. **Consular Fees.**—Clearance in and out, 10s. Endorsing agreement, 2s. 6d. **Ballast.**—Dirt, 1 yen 25 sen per

Japan—Yokohama (*continued*).

ton ; stone, 2 yen per ton. **Labour** :—1 yen per ton. **Buoy Hire** :—7 yen per day, payable to the Harbour Office. **Medical Attendance** (if employed) :—3 yen per day. **Stevedore** :—Discharging : rice, 16 sen per ton ; general cargo, 18 sen per ton ; coal, 35 sen per ton. Loading : 22 sen per ton. **Water** :—Fresh water can be obtained from barges at 35 sen per ton. **Provisions** :—Beef, 26 sen per lb. ; vegetables, 5 sen per lb. ; and bread, 10 sen per lb.

Pro Forma Charges on a vessel of 2,828 tons net reg., arriving with 6,150 tons of rice, drawing 24 ft. 6 in. ; in port 12 days, and leaving in ballast, drawing 13 ft. :—

	Yen	sen.
Tonnage dues (Customs)	141	40
Pilotage inwards	30	20
„ outwards	23	00
Mooring	1	00
Consular fees, entrance and clearance	6	25
Extension of protest	51	25
Buoy hire, 12 days	84	00
Survey of hatches	20	00
Other surveys	30	00
Tallymen at 3 yen per man per day	72	00
Stevedore, 6,150 tons at 16 sen	984	00
Winchmen at 60 sen	11	40
Steam launch attendance	30	00
Provisions, etc.	253	70
Sampan hire at 1 yen 50 sen per day	18	00
Rikisha hire at 1 yen 50 sen per day	18	00
Medical attendance, 12 days, 36 yen ; medicines supplied, 27 yen 80 sen	63	80
Disbursing commission at 1 per cent.	33	38
Postage and petties	10	00
Agency fee, inwards	100	00
Collecting inward freight, $\frac{1}{4}$ per cent. on, say, 32,000 yen	160	00

2,141 · 38 = £218 12s. 0d.

KOREA.

Korea, although still retaining an independent form of Government, is practically under the control of Japan. The area of the country is estimated to be 71,000 square miles, with a population, according to a native census taken in 1902, of something like 10,000,000. It is difficult to state even approximately the trade of the country, as the Korean authorities in their returns deal only with the open ports at which Custom Houses have been established. These open ports are : Seoul, Chemulpo, Fusan, Wönsan, Chinnampo, Mokpo, Kunsan, Masampo, Songchin, Wiju, and Yong Am Po. The Customs duties are : Exports, 5 per cent. *ad valorem* ; imports from 5 per cent. to 20 per cent. The principal imports pay $7\frac{1}{2}$ to 8 per cent. During 1906, 5,549 steamers, having a total tonnage of 2,663,190 tons, entered at the open ports ; and 4,725 sailers with a tonnage of 106,319. These sailing vessels were almost entirely under the Korean, Japanese, and Chinese flags. Foreign vessels are not allowed to trade at any but Treaty ports, very heavy penalties being inflicted for any breach of this law.

The Japanese Government has full administrative control over the Korean system of communication, including the railways from Seoul to Fusan (286 miles), Seoul to Chemulpo (26 miles), Fusan to Masampo, and Seoul to Wiju (310 miles). Improvements in the condition of the roads are being effected.

BROUGHTON OR YUNGHING BAY.

Broughton Bay, in lat. $39^{\circ}30'$ N., long. $127^{\circ}30'$ E., is in the Korean Gulf.

Accommodation.—The entrance to the bay lies between the southern end of Nachimoff Peninsula and Point Périer (Illary). The bay would have a water space of 8 to 10 miles long and 5 to 6 miles wide, were it not fronted by nine high islands and several islets or rocks ; hence the area (proper) is considerably circumscribed. The islands, however, form good shelter from easterly winds. The depths are 10 to 11 fathoms in the middle, shoaling gradually to both shores, with good muddy holding ground. The channels between the islands are also generally good and deep, with few dangers, but some of them being narrow, though sufficient for a steamer, could not be taken by a sailing vessel when the tendency was to light and baffling winds.

CHEMULPO.

Chemulpo, in lat. $37^{\circ}28'$ N., long. $126^{\circ}35'$ E., is a Treaty port.

Population.—About 30,000.

Accommodation.—The port has two anchorages, the outer one affording a safe berthing to ships of all sizes, and the inner one frequented by ships of about 1,000 tons. An enormous rise and fall of the tide, which averages 30 ft., renders the inner anchorage difficult of access to larger ships, and is also a serious hindrance to the navigation of the Seoul River. Only vessels drawing less than 6 ft. may safely run between Chemulpo and Mapu, a place on the river 3 miles S.W. of the capital. Chemulpo is con-

Korea—Chemulpo (*continued*).

nected with Seoul by telegraph, telephone, and railway. Coal and ship's supplies can be obtained. Chemulpo enjoys a beautiful climate and is never shut up by ice.

FUSAN.

Fusan, in lat. $35^{\circ}10'$ N., long. $129^{\circ}1'$ E., is a Treaty port, opened to Japanese trade in 1876, and to western nations in 1883. It is the chief port of the South-Eastern Province.

Population.—About 23,885.

Accommodation.—There is a good natural harbour. Anchorage is in $3\frac{1}{2}$ to 5 fathoms about $\frac{1}{2}$ a mile from the shore. Steamers run daily to Japan, and trains day and night to Seoul. Telegraphic communications have been established.

GENSAN.

(See **Yuensan**, below).

MASAMPO.

Masampo, in lat. $35^{\circ}7'$ N., long. $128^{\circ}29'$ E., is a Treaty port, opened to foreign trade in 1899.

Accommodation.—Anchorage is in 3 fathoms $\frac{1}{2}$ a mile from the town, and in 7 fathoms 2 miles below it. A steamer runs daily to Fusan. Telegraphic communications are established in connection with the Korean system.

YUENSAN, WÖNSAN, OR GENSAN.

Wönsan (Yuensan), in lat. $39^{\circ}11'$ N., long. $127^{\circ}21'$ E., is situated at the southern end of Broughton Bay, and the Japanese town of Gensan about 2 miles north of the Korean town. The port was opened to foreign trade in 1880.

Population.—Native town, about 13,000 ; Japanese town, over 800.

Imports.—Cotton fabrics, metals, hardware, raw cotton, kerosene, rice, etc.

Exports.—Beans, dried fish, cattle, hides, fish manure, etc.

Accommodation.—The harbour is easy of access, perfectly sheltered and has good holding ground in 6 to 7 fathoms. Food supplies are plentiful, and as regards native produce, cheap, but coal for ships' use cannot always be obtained without previous notice. Good drinking water is obtained from the River Gifford (not navigable) near the town, and from numerous streams and wells. Ships have to enter and clear at the Custom House.

Port Charges.—Tonnage Dues :—30 sen ($7\frac{1}{2}d.$) per reg. ton. One payment of tonnage dues at this or any open port in Korea entitles a ship to trade at all open ports without further payment for a period of 4 months. No other dues are collected on vessels. **Coolie Hire :—**For loading or discharging cargo, about 50 sen (1s.) per day.

YUNGHING BAY.

(See **Broughton Bay**, p. 1493.)

OMAN.

Oman is an independent state in S.E. Arabia. It has an area of 82,000 square miles and a population which is estimated at 800,000, mostly Arabs.

Commerce.—Trade is almost exclusively in the hands of British Indians, and is mainly with India. All imports are subject to 5 per cent. *ad valorem* duty. No export duties are levied, and rebate of transit duty is allowed on all goods re-exported by the importer within 6 months.

Internal Communications.—Considerable traffic with the interior is conducted by means of large caravans, which proceed under protection.

Currency, Weights and Measures.—On the coast the rupee circulates at the exchange of 152 to 176 Rs. per 100 Maria Theresa dollars, the latter being the common medium of exchange throughout the interior. The Mahmûdi (20 gad = 1 Mahmûdi, $11\frac{1}{2}$ Mahmûdieh = 1 dol.) is the only money of account; the Omanese copper coinage fluctuates greatly in value and is not considered in commercial transactions. Weights :— 24 kias = 1 maund, 1 maund = $8\frac{3}{4}$ lb.; 200 maunds = 1 bahar or 1,750 lb.

MUSCAT.

Muscat, or Maskat, is in lat. $23^{\circ}30'$ N., long. $58^{\circ}32'$ E.

Population.—About 30,000.

Imports.—Almonds, aloes, assafœtida, rice, sugar, coal, ammoniacum, nitre, copal, frankincense, British and Indian cotton goods, shawls, and China manufactures, arms and ammunition, kerosene oil, coffee, whisky, and other spirits.

Exports.—Dates, hides, asses, salt, pearls, fruit, fish, cotton, etc.

Accommodation.—On approaching the entrance there is no danger, nor is there any anchorage until within $\frac{1}{2}$ a mile of the rocks. A vessel is always safe inside except during strong N.W. winds. The cove is well sheltered, and has 3 to 5 fathoms of water.

Port Charges.—There are no harbour, tonnage, light, or other port dues.

Provisions :—Limes may be had at all seasons; bullocks, sheep, fowls, rice, and dholi may be purchased at reasonable prices. Fish plentiful, cheap and excellent. **Water :**—The ship's casks should be used in watering.

Labour :—Scarce and indifferent.

PERSIA.

Persia consists of thirty-three provinces, which are governed by Governors-General, each directly responsible to the Central Government, represented by the Shah and a National Council. The total area of the country is 628,000 square miles, and the population, according to the latest estimate, about $9\frac{1}{2}$ millions.

Commerce.—In 1901 a treaty, fixing a new customs tariff was concluded between Persia and Russia by which the “most favoured nation” treatment was reserved to the countries already enjoying it. A few days before this new tariff came into force, February 14, 1903, a treaty was signed with Great Britain under which the duties levied on British imports were fixed at the same rate as on Russian goods. The total value of imports and exports for the year ended March 20, 1908, was £14,526,234.

Internal Communications.—These consist of a line of railway 6 miles in length, from Teheran to Shah Abdul-Azîm, the river Kârûn, which is open for foreign navigation as far as Ahwâz, and on which Messrs. Lynch Brothers have established a steamer service; and a number of good roads.

Currency, Weights and Measures.—Accounts are reckoned in dinârs, an imaginary coin, the ten-thousandth part of a toman of ten krans. The kran, a silver coin ($52\frac{1}{2}$ krans = £1 sterling), is the monetary unit, the coins current being 1, 2, and 5 kran pieces, tomans, and 5 and 10 cent nickel pieces, these latter having replaced the copper coinage withdrawn from circulation in 1900. The Imperial Bank of Persia issues notes having a value of 1, 2, 3, 5, 10, 20, 50, and 100 tomans.

The weights used in commercial circles vary in almost every town. Most articles are bought and sold by a weight called the batman or man, the value of which is commonly taken at 6·49 British Imperial pounds. The unit of measure is the zar or gez. Of this standard there are several in use, the most general representing 40·95 in. A farsakh or parsang theoretically = 6,000 zar, and may be taken on an average to equal $3\frac{1}{4}$ geographical or 3·87 English statute miles.

There are British post offices at Bushire, Bandar Abbas, Lingah, and Mohammerah; correspondence with Europe bears Indian stamps.

BANDAR ABBAS.

Bandar Abbas is in lat. $27^{\circ}12' N.$, long. $56^{\circ}15' E.$ It has a frontage of $\frac{1}{2}$ to $\frac{3}{4}$ mile and is next in importance to Bushire, as almost the whole trade of Kerman and Yezd passes through it.

Population.—Varies from 5,000 to 12,000, according to the season.

Imports.—Tea, cotton goods, thread and twist, indigo, sugar, wheat, rice, copper, iron, spices, hardware, and candles.

Exports.—Dry fruit, opium, wool, dates, Persian woollen carpets, drugs, dried provisions, seeds, hides and skins, cotton and silk (raw and manufactured).

Persia—Bandar Abbas (*continued*).

Accommodation.—The anchorage for moderate sized vessels is 1 mile off the town in 3 fathoms of water with a mud bottom; for larger ships, about 2 miles off in 4 to 5 fathoms, the centre of the town bearing N.N.W. The holding ground is good, and the roadstead well sheltered, except from S.W. The landing is bad at low water, as the tide recedes a long distance.

Port Charges.—There are no port, pilotage, towage, light, sluice and dock, or sea police dues. **Ballast** :—Sand ballast is carried alongside for 4 Rs. (4s. 4d.) per ton. **Coal** :—None procurable. **Cost of Discharging Cargo** :—Cargo is discharged by coolies, who work under the supervision of a tindal. They are paid 10 a. (8½d.) per head per day. **Dispatch** :—vide **Bushire**. **Lighterage** :—2, 4, or 8 a. (1¾d., 3¼d., or 6½d.) per package, according to size. **Boat Hire** :—5 to 7 krans (2s. to 2s. 9½d.) to or from the ship. **Provisions** :—Meat (mutton) is usually obtainable at ¼ kran (1¼d.) per lb. Potatoes are occasionally obtainable at 1 kran (5d.) per maund (9lb.). Other vegetables are very scarce. **Water** :—3 Rs. (3s. 3d.) per 100 gallons, or 25 skins. Water obtained from wells is not wholesome. The only good water is rain-water, stored in reservoirs called “áb-ámbâr.”

BUSHIRE.

Bushire, or Abu-Shehr, in lat. 28°55' N., long. 50°50' E., is the principal seaport of Southern Persia. It is situated on the N.E. coast of the Persian Gulf.

Population.—30,000.

Imports.—Cotton goods, tea, sugar, indigo, arms and ammunition,* copper, woollens, thread and twist, porcelain and chinaware, spices, drugs, silk piece goods, glass and glassware, provisions, and oilmen's stores.

Exports.—Opium, Persian woollen carpets, corn, hides and skins, wool, cotton, almonds, gum, rose-water, silk, shells (mother-of-pearl), tobacco, horses, dates, and seeds (principally simsim seed).

Accommodation.—There are three anchorages, viz., the Outer and Inner Roads, and the Creek. The Outer Road is about 6 miles off, with the town bearing E. by N., and is used by vessels of too large a draught to enter the Inner Road. It is quite exposed to the N.W. and S.E. winds, but boats can easily fetch off with the prevailing winds. A pilot will come off here, weather permitting, if a vessel heaves-to for him in 3½ to 4 fathoms. Its depth is 4 fathoms, and its bottom is soft mud. A vessel drawing more than 15 ft. would have to wait here for the tide before entering the Inner Road.

The Inner Road is about 3¼ miles off the town. Its entrance channel is about 15 ft. deep at low water springs, and inside the soundings are 2½ to 4 fathoms, over a muddy bottom. Vessels drawing 13 ft. can enter these roads, and the anchorage here is better sheltered in a N.W. wind. The further a vessel is in to the eastward, the easier will it be for boats to fetch the ship from the town.

The Creek passes close along the east side of the town, where it is 2 cables broad, and has 4 to 6 fathoms with a hard bottom. It thence runs to the south-east. It has two entrances—one for small boats, the other for large ones. Vessels of 5 or 6 ft. draught can get in here at any high water, and anchor close to the town.

* The importation of arms and ammunition is prohibited.

Persia—Bushire (*continued*).

Pilotage.—This is paid to the pilot himself in krans, or their equivalent in Indian rupees, at the rate of 12 a. per foot of draught whether taking vessels in or out of the Inner Roads. Vessels bound for Busrah, which is about 60 miles up the Shat-el-Arab River, must engage pilots here to take them across the Busrah bar and up the river. The charge for pilotage in this case is 120 Rs. In addition to this the pilot is entitled to a subsistence allowance of 4 krans (1s. 8d.) per day until he returns to Bushire. No reduction of pilotage is allowed for vessels not performing any commercial operation.

Port Charges.—**Port Dues** :—None. **Towage** :—No tugs or tow-ropes. **Light, Sluice, and Dock Dues** :—None. **Sea Police** :—None. **Ballast** :—Sand ballast is carried alongside for 1 R. 8 a. per ton. **Coal** :—None. **Cost of Discharging Cargo.**—Cargo is discharged by coolies, who work under a tindal or overseer. The coolies are paid 12 a. each, and the tindal gets 1 R. and serang 1 R. 8 a. per day. **Dispatch.**—There are no regulations limiting the time within which cargo has to be discharged. **Lighterage** :— $\frac{3}{4}$ kran to 1 kran per package, according to size. All lighters at this port are in charge of a Persian Customs official called the Hamal Bashi, who arranges to land all cargo for consignees. **Boat Hire** :—Hire of a small boat or lighter for conveying passengers or luggage to or from the ship in the Inner Roads is 2 Rs. to 5 Rs. per trip, according to the state of the weather. Hire of a large boat for the same purpose, to or from the ship in the Outer Roads, is 18 to 30 krans per trip. Boats are not allowed to leave or arrive at the town wharves after sunset. **Provisions** :—Meat (mutton), 3 krans per maund ($7\frac{3}{4}$ lb.); poultry, 40 to 50 krans per dozen; eggs, 7 krans per 100; fish, $\frac{1}{4}$ to $\frac{3}{4}$ kran ($1\frac{1}{4}$ d. to $3\frac{3}{4}$ d.) per maund ($7\frac{3}{4}$ lb.); fruit, 1 to 2 krans (5d. to 10d.) per maund; vegetables, $\frac{1}{2}$ to $1\frac{1}{2}$ krans ($2\frac{1}{2}$ d. to $7\frac{1}{2}$ d.) per maund ($7\frac{3}{4}$ lb.). **Water** costs $\frac{1}{2}$ kran per donkey load.

KANGUN.

Kangun, or Kangoon, in lat. 27°47' N., long. 52°7' E., stands at the head of a bay. It was once a port of importance, but is not so now.

Population.—About 1,000.

Export.—Firewood.

Accommodation.—There is a roadstead, where vessels can ride in safety in tempestuous weather. The anchorage is in 5 fathoms, $\frac{1}{2}$ to $\frac{3}{4}$ mile off shore. The bay affords shelter from the N.W. by W., but some swell rolls in at W.S.W. About 10 miles further to the westward the shelter is much better. At the town the beach is sandy, but at Ras-al-Marrar, the low south-east point of Kangun Bay, 2 miles from the town, rocks extend about a cable off shore.

Port Charges.—None. **Provisions** :—There is no market place here, but fresh meat, fowls, eggs, fish, milk, etc., are obtainable. **Water** :—There is good well water, and a supply is obtainable by paying the hire for fetching it.

LINGAH.

Lingah is in lat. 26°30' N., long. 54°50' E.

Population.—About 12,000.

Persia—Lingah (*continued*).

Imports.—Cotton goods, woollen goods, spices, sugar, etc.

Exports.—Pearls, cottons, tobacco, etc.

Accommodation.—The anchorage is in 5 fathoms, $\frac{1}{2}$ a mile off the shore; the holding ground is good, there being a clay bottom. It is sheltered from all winds except the S.W., which sends a heavy sea into the roads, but this wind is always of short duration. Outside the anchorage there is a “khor,” or belt of deep water, about 7 or 8 fathoms, beyond which it shoals again to $5\frac{1}{2}$ fathoms, and then deepens to 10 fathoms, 5 miles south of the town. In front of the town there is a breakwater, enclosing a space of about 100 yards, in which boats lie at low water to repair, etc. Lingah is used as an entrepôt, or port of deposit, for goods from foreign countries for distribution round the Gulf, but during the last few years it has lost much of its importance owing to the excessive duties levied by the Persian Customs administration. It is also a depôt for pearls from the Arabian coast of the Persian Gulf. Small repairs can be roughly executed.

Pilotage.—No pilot is required for entering or leaving this port, but should a vessel wish to proceed direct from here to the Shat-el-Arab River, pilots can sometimes be had to take her across the bar and up the river.

Port Charges.—**Port Dues** :—None. **Towage, Light, Sluice, and Dock Dues** :—None. **Sea Police** :—None. **Ballast** :—Sand ballast is obtainable alongside at 3 to 4 Rs. (3s. 3d. to 4s. 4d.) per ton. **Cost of Discharging Cargo** :—Cargo is discharged by coolies, paid 12 a. ($9\frac{1}{4}$ d.) each per day. **Dispatch.**—See **Bushire** and **Bandar Abbas**. **Lighterage** :—On small packages of sundries, 9 krans (3s. $7\frac{1}{4}$ d.) per 100; coffee, 12 krans (4s. $9\frac{1}{2}$ d.) per 100 bags; piece goods, $1\frac{1}{2}$ krans ($8\frac{1}{2}$ d.) per package, to 15 krans (6s.) per 100 packages, according to size. **Boat Hire** :—3 to 5 krans (1s. 3d. to 2s.) for a trip to or from the ship. **Provisions** :—Mutton, $1\frac{3}{4}$ a. ($1\frac{1}{2}$ d.) per lb.; potatoes, 8 a. ($6\frac{1}{2}$ d.) per maund (9 lb.); other vegetables are scarce. **Water** :— $2\frac{1}{2}$ to 3 Rs. (2s. 9d. to 3s. 3d.) per 100 gallons. **Coal** :—None procurable.

RUSSIA IN ASIA.

The Asiatic division of the Russian Empire embraces more than one-third of Asia, but is only of interest to shipowners and those connected with the shipping industry, owing to the existence of Vladivostock and one or two other less important ports. The shipping laws and the regulations which appear under the heading of **Russia** in the European section of this work applying to ships trading with Russian European ports, have full effect in these ports of Asiatic Russia.

ALEXANDROVSKY.

Alexandrovsky, in lat. $51^{\circ}45'$ N., long. $140^{\circ}40'$ E., is situated at the head of De Castries Bay, on the W. side of the Strait of Tartary.

Accommodation.—The bay is covered with ice from November to April, and is open to easterly winds. The depth at the entrance of the bay is 12 fathoms, which gradually shoals to 2 fathoms close to the shore. Vessels bound for Nikolaevsk, on the Amur, call here to procure a pilot. Fire-wood costs 3 rbls. per fathom. Fresh water can be had at a brook which flows into the bay. Provisions are scarce and dear. Fresh beef is 12 rbls. per pood (36 lb.). Coal is not procurable. In order to procure rye flour, application must be made to the military commander, who charges 1 rbl. 80 cps. per pood. Fresh fish are easily caught in the bay, and lobsters and salmon trout may be had from the natives in exchange for bread.

NIKOLAEVSK.

Nikolaevsk, in lat. $53^{\circ}18'$ N., long. $140^{\circ}35'$ E., is situated on the Amur River.

The river is open to navigation for about six months of the year, and is navigable for vessels of the largest tonnage. There are three courses for entering the Amur : (1) The southern fairway : From De Castries Bay along the east coast of the mainland, across the southern bar, allowing vessels to pass with a draught up to 13 ft. over the bar. (2) The northern fairway : Entering the Amur from the Ochotsk Sea, near the Isle of Langre, the depth on the bar is about 16 to 17 ft. (3) The Saghalien fairway, extending from De Castries along the west coast of Saghalien up to the entrance to the northern bar, can safely be passed by vessels up to 16 ft. draught. Licensed pilots are available during the navigation at De Castries Bay and Langre Island.

PETROPAULOVSKI.

The Russian settlement of Petropaulovski, on the N.E. side of Avatcha Bay, is in lat. $53^{\circ}0'$ N., long. $158^{\circ}45'$ E.

Imports.—Coal, groceries, etc.

Exports.—Furs and fish.

Accommodation.—The harbour is in a little inlet, with from 4 to 9 fathoms of water, and can be entered by vessels of the largest draught. A wooden pier has been constructed allowing a safe berth for vessels up to

Russia in Asia—Petropaulovski (*continued*).

16 ft. draught. Wood, water, flour, fish, and fresh beef are to be had. The means of discharging are said to be poor. As there are no pilots, masters should provide themselves with the special charts published of the Bay of Avatcha. Tarienski, in the S.W. angle of the bay, is an excellent harbour with deep water and is well sheltered. Labour, 1 rbl. 50 cps. per day.

VLADIVOSTOCK.

Vladivostock, in lat. $43^{\circ}8' N.$, long. $131^{\circ}56' E.$, is the chief Russian naval station on the Pacific, and the commercial centre of East Siberia.

Population.—40,000.

Imports.—Iron, machinery, coal, provisions, etc.

Exports.—Seaweed, skins, timber, fish, beans, bean-cakes, wheat, etc.

Accommodation.—There is a very fine harbour, where vessels can lie landlocked in 8 or 9 fathoms. There is a long jetty to which vessels of 5,000 to 6,000 tons can come alongside. The total length of wharfage is 3 cables with 28 ft. of water alongside. The port is kept open during the winter by ice breakers. The Government have an iron sectional dock with a lifting power of 8,000 tons. There are five sections, and Russian men-of-war, to 3,000 tons displacement, have been docked. The Czarevitch Nicholas Dock has had vessels to 296 ft. length, 52 ft. beam, and 24 ft. draught. Two dry docks were built in 1907 and have a length of 620 ft. over all ; length on blocks, 568 ft. ; breadth of entrance at coping, 90 ft. ; breadth of entrance on sill, 90 and 84 ft. ; depth on sill, 32 to 34 ft. ; depth on blocks, 30 ft. 6 in. From the spring of this year it is intended to allow merchant vessels to utilize these docks for purposes of cleaning, painting, and small repairs.

Time Signals.—Chronometers can be checked here. A ball is hoisted on a white mast, on the Harbour Office, 164 ft. above the sea, at 11 h. 55 m. a.m., and dropped at noon, Vladivostock mean time. A gun is fired simultaneously. Noon at Vladivostock is 15 h. 12 m. 26.5 s. Greenwich mean time.

Pilotage.—Pilots can be obtained at Askold Island.

Port Charges.—**Wharf Dues** :—50 rbls. per week. **Shipbroker** :—For entrance, 50 to 100 rbls. ; no charge for clearance. **Ballast** :—2 rbls. per ton. **Anchorage Dues** :—20 cps. per net reg. ton. **Stevedores** :—30 to 40 cps. per ton discharging or loading steamers. **Dispatch** :—Coal can be discharged at the rate of 100 to 125 tons per day out of each hatch. **Provisions** :—Plentiful and cheap.

SIAM.

The kingdom of Siam occupies the central part of the Indo-Chinese peninsula ; it has an area of about 195,000 square miles, with a population, estimated upon the basis of a very incomplete census taken in 1904, of 6,686,846.

Commerce.—The trade of the kingdom, mostly in the hands of foreigners, is valued at between £13,000,000 and £13,500,000 sterling per annum—imports, £5,784,985, and exports, £7,332,241. The principal imports are cotton goods, silks, gunny bags, kerosene, sugar, opium, hardware, cutlery, steel, iron, and machinery. The exports include rice, teak, marine products, cattle, hides, pepper, stick lac, and birds' nests.

Internal Communications.—The means of communication between the coast and river ports and the up-country and northern districts have been vastly improved during recent years. Since 1893, railways with a mileage of 594 miles have been opened for public traffic ; metal cart roads, provided with substantial bridges, are being constructed under the supervision of European engineers. There has also been a great increase in the number of steam launches and junks employed in conveying merchandise to the harbours situated on the small rivers which, owing to the shallow bars at the entrance, are not navigable by larger vessels.

There is a post and telegraph service, communication being maintained with Europe by means of an overland wire via Moulmein and Saigon.

Currency, Weights and Measures.—The currency of the country is the tical, which for all practical purposes is equal to 1s. 6d. ; 64 atts = 1 tical. The other coins are the salung = 16 atts ; the fuang = 8 atts ; the song pai = 4 atts, and 2, 1, and $\frac{1}{2}$ -att pieces. There are no actual cent pieces, but, for purposes of account, 100 cents are taken to be equal to 1 tical. The Indian rupee circulates in some districts, but the exchange value is gradually falling, having depreciated from 64 to 48 atts. The exchange between ticals and dollars varies ; during 1908, the Hong Kong exchange averaged 77 dol. = 100 ticals ; Singapore exchange, where the value of the dol. has been fixed at 2s. 4d., averaged $64\frac{1}{2}$ dol. = 100 ticals. The Siamese Government having decided to establish the currency upon a gold standard, have closed their mint to the free coinage of silver, and fixed the exchange with sterling at 1s. 6d. = 1 tical. At Bangkok there are branches of the Hong Kong and Shanghai Bank, the Chartered Bank of India, and the Banque de l'Indo et Chine, all being banks of issue. A native bank, the Commercial Bank of Siam, Ltd., has recently been established under royal charter.

The weights and measures are as under :—

WEIGHTS.

80 ticals = 1 catty = $2\frac{2}{3}$ lb. avoirdupois.
50 catties = 1 picul = 133½ „ „

Siam.**MEASURES OF LENGTH.**

2 sok = 1 ken = 39 in.

2 ken = 1 wa = 78 „

MEASURES OF CAPACITY.

20 thanans = 1 thang = 3.75 galls.

*1½ thangs = 1 sat = 4.68 „

80 sats or 100 thangs = 1 coyan = 375 galls.

* The sat is used for measuring rice only, the thang is used for liquids as well.

Emigration and Immigration.—There are no special regulations in force to which shipmasters must conform before taking emigrants from Siam, nor which prohibit the immigration of undesirable persons. The principal emigrant from Siam, if he may be so called, is the Chinese coolie returning to his own country. The Siamese hardly emigrate at all.

BANGKOK.

Bangkok, in lat. 13°45' N., long. 100°30' E., is about 25 miles from the sea, on the Menam River.

Population.—493,677 (1905).

Imports.—Tea, quicksilver, silks, porcelain, camphor, piece goods, opium, glassware, copper, coal, sugar, and kerosene.

Exports.—Rice, teel seed, sapan-wood, gums, teak, gamboge, pepper, cocoa-nut oil, horns, hemp, raw silk, ivory, hides, cardamoms, feathers, salt, fish, and cattle.

Accommodation.—The river is deep and free from shoals. At about 3 miles within the entrance is Paknam, where vessels stop to take on board a Custom House officer. Vessels remaining at the bar anchorage can obtain daily supplies of fresh food from Paknam, but it is considered better to send to Bangkok for stock for a voyage.

Large vessels can ascend as far as Bangkok, but the depth of water varies according to the season of the year from 3 to 5 ft. at low water, and 11 to 14½ ft. at high water springs. The least depth of water on the bar is from February to September. Vessels drawing 14½ ft. have passed the bar at high water springs, but a vessel drawing 12 ft. stuck on the bar for 7 days. The safest plan is to load in the city to a few inches under high water draught, and finish loading outside in the roads. At the city, vessels either lie alongside the wharves of their consignees or anchor in mid-stream, where there is every facility for discharging and loading by means of the numerous cargo boats.

During the N.E. monsoon, ships proceed to Anghin, about 20 miles from the bar, to complete loading. The outer edge of the bar is composed of sand, but the inner consists of soft mud. In the S.W. monsoon a heavy swell sets in, causing detention, but no danger. Lighters sometimes remain a week unable to cross the bar, on which a heavy sea rolls. The holding ground is good. All vessels coming from any Chinese ports must call at Koh Prah, about 56 miles from the bar, for inspection, this being the quarantine station for Siam. Repairs can be executed, as there is a shipbuilding yard, well supplied with modern machinery, for repairing steamers up to 1,200 tons. There is a sheer legs to lift 25 tons. The Government have a shipbuilding yard here also, and a crane to raise 30 tons.

Siam—Bangkok (*continued*).

The following are the dimensions of the dry docks, etc. :—

Dock.	Length over all in feet.	Width of Entrance at High Spring Level in feet.	Depth on the Sill at High Springs in feet.
Government	306	60	12½
" No. 1	300	60	12
" No. 2	130	25	7½
Bangkok Dock Co., No. 1	330	40	11½
" No. 2	130	23	7½
Patent Slip, with a lifting power of 300 tons	—	—	—

There is a railway from Paknam to Bangkok.

Pilotage.—From the bar to Bangkok, and from Bangkok to a safe anchorage outside the bar, inclusive. Rates for steamers and also for sailing vessels being towed :—

		Ticals	c.
Ships of 150 tons reg. and under		115	00
" over 150 tons reg. and under 200 tons		137	50
" 200	250	160	00
" 250	300	166	00
" 300	350	172	00
" 350	400	177	50
" 400	450	183	50
" 450	500	189	00
" 500	550	195	00
" 550	600	200	00
" 600	650	204	00
" 650	700	207	00
" 700	750	210	00
" 750	800	213	00
" 800	850	216	00
" 850	900	219	00
" 900	950	222	00
" 950	1,000	225	00
" 1,000		228	00

If over 1,000 tons register 2 ticals per every 50 tons additional.

Rates for sailing vessels not being towed 15 per cent. additional.

On the engagement of a pilot the charges are for both inward and outward pilotage, and not separately.

Pilotage for Koh-si-chang, Anghin, and Koh Prah is 50 ticals for first 600 net reg. tons, and 2 ticals for every 50 tons exceeding 600 tons.

One white-painted vessel with "pilot" painted on the sides, is always anchored outside the bar in 3¾ fathoms, low water spring tide, flying the pilot flag by day and showing a flare at night.

Port Charges.—**Light Dues** :—1½ c. per ton. **Tonnage Dues** :—1½ c. per ton. **Stevedores** :—For rice, 16·67 ticals per 1,000 piculs, inside the bar ; 18·30 ticals per 1,000 piculs, outside the bar ; teak, ¾ to 1 tical per ton of 50 cubic ft. **Consular and Customs Dues** :—10 to 15 ticals per vessel. **Tug Boat** :—From the bar for vessel of 427 tons, 200 ticals up, and 445 ticals up and down ; it is only necessary to employ a tug during the N.E. monsoon, as in W.S.W. monsoon vessels can sail up to the town. **Towage** :—For 1,000 tons, 435 ticals up, and 720 ticals up and down. **Labourage** :—1 tical per day. Vessels load within the shelter of the islands of Koh-si-chang, some 20 miles south of the bar. Fresh water from an artesian well can be obtained in Bangkok at a reasonable price. Dunnaging rice steamers is expensive at this port, and captains of steamers would be wise when coming

Siam—Bangkok (*continued*).

from China to bring their own mats and bamboos. Mats cost 30 ticals per 100. Bamboos, 90 ticals per 1,000. Firewood, 36 ticals per 1,000. Labour for laying dunnage, $1\frac{1}{2}$ ticals per man per day. Winchmen, 2 ticals per man per day. **Medical Attendance** :—10 to 15 ticals for first visit to steamer inside river. **Telegrams to Europe** :—2 ticals 25 cents. per word. **Lighterage on Rice** :—About $7\frac{1}{2}$ atts per picul. **Address Commission** :— $2\frac{1}{2}$ per cent. on rate of freight is customarily reckoned on 6 mths. rate of exchange on London. **Disbursements** :— $2\frac{1}{2}$ per cent. and 1 per cent. insurance. **Carriage Hire** :—Short distance, one pony, 2 ticals ; two ponies, 4 ticals. **Coal** can be obtained from the Borneo Co., Ltd. **Provisions** :—Cabin rice, 8 ticals 48 atts per cwt. ; pork, 30 atts per lb. ; fowls, 56 atts each ; ducks, 1 tical to 1 tical 16 atts. **Boat Hire** :—In harbour, 1 to 2 ticals per day, or as arranged.

When vessels load outside the bar, lighterage should be paid by the charterers.

Port Rules.—Masters of ships are prohibited, under a penalty of from 80 to 200 ticals, from throwing over ballast, sand, stone, earth, etc., anywhere near the bar of the River Menam, where the water does not exceed 7 fathoms in depth, or anywhere in the bed of the river. Masters of vessels trading at the port of Bangkok are also required to prohibit their crews from going on shore with knives or other weapons.

CHENTABUN.

Chentabun is in lat. $12^{\circ}42'$ N., long. $102^{\circ}8'$ E., 14 miles from the mouth of the river of the same name.

Exports.—Tobacco, pepper, rice, fruits, gamboge, ivory, and precious stones. The trade is almost entirely in the hands of the natives and the Chinese.

Accommodation.—Vessels drawing 13 ft. can ascend the river about 4 miles at low water, and there is convenient anchorage outside the bar in 3 to 4 fathoms, about $\frac{1}{2}$ a mile off. Springs rise about $5\frac{1}{2}$ ft.

Fresh stock is scarce, but good fresh water can be obtained in a small bay, about 15 miles S.E.

THE STRAITS SETTLEMENTS.

The Straits Settlements, which comprise Singapore, Penang, and Malacca, form a British Crown Colony, having an area of 1,472 square miles, with a population of 619,796. Christmas Island and the Cocos Islands now form part of the settlement of Singapore, the island of Labuan being also administered by the Governor of the Colony.

Commerce.—The sterling value of the foreign trade of the colony (excluding Labuan and Christmas and the Cocos Islands) during 1907 amounted to £70,589,000; imports, £37,668,000; exports, £32,921,000. The total imports into the three settlements from all places and from each other during 1907 amounted to £39,143,333, the principal items being cotton and silk piece goods, opium, spirits, petroleum, sarongs, coal, rice, fish (dried and salted), tobacco, tin ore, wheat flour, and sugar; and the exports on the same scale to £34,416,666, the chief items being sago, coffee, gambier, gums, hides, spices, tobacco, copra, rattans, tin, preserved pine-apples, and Para rubber. The total tonnage of merchant vessels arriving and departing during the year was 20,055,874 tons.

Internal Communications.—The communication between the various settlements and between the ports and the interior of each is maintained by means of steam ferries, railways, and tramways. There is an excellent post and telegraph service, and cable communication with all parts of the world.

Currency, Weights and Measures.—The dollar of 100 cents, value 2s. 4d., is the standard coin of the colony. The dollar and half-dollar piece and the British sovereign are legal tender up to any amount. Subsidiary silver coins are 20, 10, and 5-cent pieces, which are legal tender for sums not exceeding 2 dollars; and copper 1-cent, $\frac{1}{2}$ -cent, and $\frac{1}{4}$ -cent pieces, legal tender for sums up to 1 dollar.

WEIGHTS.

1 picul of 100 catties = 133 $\frac{1}{2}$ lb.
1 coyan = 140 piculs = 5,333 $\frac{1}{2}$ lb.

Tonnage Scale.—Freight payable on net weight delivered, or on measurement delivered:—

DEAD WEIGHT.

	1 ton.		1 ton.
Alum, in bags	20 cwt.	Gum copal, in bags	18 cwt.
Antimony ore	20 "	Metals	20 "
Arrowroot, in bags	20 "	Rice	20 "
Beeswax	20 "	Rice dust	15 "
" cases	50 c. ft.	Sago, pearl, in bags	18 "
Camphor	50 "	Sago flour, "	20 "
Coffee, in bags	16 cwt.	Saltpetre	20 "
Cowries, in bags	20 "	Sugar, in bags or baskets	20 "
" cases	50 c. ft.	Tallow, in casks or cases	50 c. ft.
Cutch, in boxes	18 cwt.	" tins	20 cwt.
" bags	20 "	Tapioca, flake	14 "
Gambier, screwed cubes	20 "	" pearl	18 "
" packed in rolls	18 "	" flour	20 "
Gram	20 "	Tin ore	20 "
Gum benjamin, block, in cases	20 "	Oil-cake, circular slats	14 "
Gum copal, in baskets	16 "		

The Straits Settlements.

LIGHT FREIGHT.

	1 ton.		1 ton.
Arrack, in casks	50 c. ft.	Hemp, in bales	12 cwt.
Arrowroot, in boxes	50 "	Hides, buffalo, in bales or loose	10 "
Betel nut, in bags	14 cwt.	" " tanned	12 "
Borneo rubber, in baskets	12 "	" " cow	12 "
" " cases	50 c. ft.	Horns, buffalo, in baskets	7 "
Canes, Malacca	1,200 in No.	" " loose	9 "
" other kinds	1,000 "	Illipe nuts	12 "
Cardamoms, in bags	12 cwt.	India-rubber, in baskets	10 "
" " cases	50 c. ft.	" " cases	50 c. ft.
Cassia buds	50 "	Mace and nutmegs, in cases	50 "
Cassia, in cases	50 "	Oil	50 "
" bundles	50 "	Paddy	12 cwt.
Cigars	50 c. ft.	Patchouli, in bales	50 c. ft.
Cloves, in bags	10 cwt.	Pepper, black	12 cwt.
" " cases	50 c. ft.	" long	10 "
Clove stems, in bags	8 cwt.	" white	14 "
Coffee in parchment, in bags	12 "	Piece goods	50 c. ft.
Copra	12 "	Rattans	7 cwt.
Cordage	50 c. ft.	Rum, in casks	50 c. ft.
Coton	50 "	Sago, in boxes	50 "
Cubebs	8 cwt.	Sandal-wood	8 cwt.
Cubeb stems, in bags	8 "	Sapan-wood	8 "
Dragons' blood	50 c. ft.	Shells, green snail, in baskets	8 "
Elephants' teeth	15 cwt.	" M.O.P.	18 "
Fish maws, in cases	50 c. ft.	" other kinds	10 "
Gambier, unscrewed, in bags	10 cwt.	" " in cases	50 c. ft.
" in baskets	8 "	Silk, raw	50 "
Gamboge		Stick lac, in cases	50 "
Gum arabic		Sugar candy	50 "
Gum benjamin, loose	} in cases 50 c. ft.	Tapioca, in boxes	50 "
Gum copal		Tea	50 "
Gum dammar		Teel-seed	14 cwt.
Gutta-percha, loose	12 cwt.	Timber	50 c. ft.
" in bags or baskets	12 "	Tobacco	50 "
" in cases	50 c. ft.	Tortoise-shell	50 "

Dunnage and broken stowage, in all cases, 20 cwt.

MALACCA.

Malacca, in lat. 2°16' N., long. 102°13' E., is a free port. It is about 110 miles from Singapore and 250 miles from Penang.

Imports.—Earthenware, iron, salt, sugar, rice, cotton goods, salt fish, etc.

Exports.—Rice, sago, sandal-wood, tapioca, spices, gambier, copra, cocoanuts, gums, rattans, etc.

Accommodation.—Vessels lie in an open roadstead, in 8 to 10 fathoms water, 2 miles from the town. The anchorage is good, and is only exposed to the squalls which occur during the breaking up of the monsoons. The climate is healthy. During the S.W. monsoons sudden hard squalls frequently blow into the road. Repairs can be executed at the shipbuilding yard, where there are sheers to raise 10 tons. Malacca is only visited by coasting steamers from Singapore and Penang, which call daily.

Light Dues :— $\frac{1}{4}$ anna per ton. Fresh provisions cheap.

NANCOWRY ISLAND.

Nancowry Island is in lat. 8°0' N., long. 93°38' E.

Accommodation.—The harbour is formed between the Islands of Nancowry and Kamotra, and is commodious and sheltered from all winds. It has two narrow entrances, one from the east, and the other from the west. and can therefore be entered or left without difficulty in either monsoon,

The Straits Settlements—Nancowry Island (*continued*).

There is sufficient water at the entrance for the largest ships. There is a stone jetty about 700 ft. long. This harbour is considered the best in the Nicobar Islands.

PENANG.

Prince of Wales Island (native name Pulo Penang) is at the entrance of the Strait of Malacca, about 360 miles to the N.W. of Singapore, lat. $5^{\circ}20'$ N., long. $100^{\circ}15'$ E. Distance from Liverpool by the Cape, 11,095 miles ; by Suez Canal, 7,912 miles.

Population.—140,000.

Imports.—Piece goods, iron, cutlery, etc.

Exports.—Pepper, cassava, flour, cloves, coffee, nutmegs, fish maws, hides, horns, rum, sugar, tapioca, tortoise-shell, betel nuts, rattans, tin, gutta-percha, india-rubber, tobacco, etc.

Accommodation.—The anchorage is commodious and well sheltered. Vessels of the largest draught can enter the harbour. Weld Quay is 5,000 ft. long, with 7 to 9 ft. alongside at high water, and $1\frac{1}{2}$ ft. to nil at low. Swettenham wharf is 600 ft. long, and has 30 ft. alongside at low water ordinary springs. There is one 20-ton hand crane, one 7-ton, and one 5-ton steam crane, fitted on this wharf. Bulk cargoes, salt, coal, etc., can be discharged at the rate of 200 tons a day.

The Penang Government Dry Dock is 343 ft. long over all, 46 ft. wide at the entrance at high springs level, and $14\frac{1}{2}$ ft. on the sill at high springs. There is a patent slip to lift vessels up to 200 tons. There is a large and well-fitted machine shop, and an efficient staff is maintained under European management. The steam hammer is capable of wielding a 9-inch shaft. There are sheers to lift 30 tons. A large stock of material and fittings is kept. There are coal sheds near the wharf capable of holding 10,000 tons.

Limits of the Port :—From the obelisk on Pulau Tikus Island in a straight line to harbour-mark at Bagan Jermal, in Province Wellesley ; thence along the shore of Province Wellesley to the right bank of the mouth of the River Prye ; thence up that bank of the said river to the Pontoon Bridge ; thence across that bridge and down the left bank to the harbour-mark on that side of the mouth of the river ; thence in a straight line to the harbour-mark near the village of Jelutong, in Penang Island ; thence along the shore of Penang Island to Tanjong Bunga ; and thence in a straight line to the obelisk on Pulau Tikus Island, including the Penang River as far as Dato Kramat Bridge, and all creeks and waterways between the harbour-mark at Jelutong and the obelisk on Pulau Tikus Island.

Limits of Channels :—The North Channel extends from the northern limit of the port to an imaginary line running from Muka Head lighthouse 5 miles due north, and thence in an easterly direction to the south bank of the Muda River ; and the South Channel from the southern limits of the port to an imaginary line running from the southern end of the Island of Pulau Kandy in an easterly direction to the south bank of the Krian River.

Pilotage.—By the North Channel, 1 dol. 50 c. per ft. ; by the South Channel, 1 dol. 75 c. per ft. Not compulsory. The pilot steamers have a red and white funnel, and fly a red and white pilot flag.

Port Charges.—**Light Dues :**— $1\frac{1}{2}$ c. per ton inwards, and the

The Straits Settlements—Penang (continued).

same outwards. **Commission** :—5 per cent. ; on disbursements, $2\frac{1}{2}$ per cent. **Water** :—1 dol. 5 c. per ton. **Provisions** :—Bread, 5 c. ; and beef 14 c. per lb. ; coal, 25 dols. per ton. Firewood may be procured at moderate prices, also bullocks and poultry. **Ballast** :—Sand, 75 c. per ton.

PORT BLAIR.

Port Blair, in lat. $11^{\circ}45'$ N., long. $92^{\circ}45'$ E., is the port of the penal settlement in the South Andaman Islands.

Imports.—General merchandise.

Exports.—Timber, cane, rattan, roots, leather, tea, shells, carved and fancy work, tortoise-shells, cattle, etc.

Accommodation.—This is a safe harbour, and a good port of refuge. There are two entrances, one from the northward of Ross Island, and the other from the southward, but care should be taken when approaching from the latter to keep clear of the Seostris Shoal. There is plenty of water all over the harbour, from 3 to 25 fathoms, and it is well buoyed.

The undermentioned leading lights were established with effect from March 8, 1905, in the following positions in Port Blair harbour.

(a) Atlanta Point leading lights consist of one lower and one upper light, each exhibiting a fixed white light of about 70 candle power. The lower light is 230 yards N. $83\frac{1}{2}^{\circ}$ W. from the centre of the Cellular Jail (as shown on Admiralty Chart No. 2,505), and is 70 ft. above high water. The upper light is 903 ft. S. 35° W. from the lower light, and is 144 ft. above high water. These two lights, when brought in line one above the other, lead from seaward S. 35° W. into the harbour.

(b) South Point leading lights consist of one lower and one upper light, each exhibiting a fixed white light of about 35 candle power. The lower light is on the end of South Point Jetty, and is 7 ft. above high water ; the upper light is 595 ft. S. $11\frac{1}{2}^{\circ}$ E. from it, and 40 ft. above high water. These lights in line one above the other lead from the Atlanta Point leading light line, S. $11\frac{1}{2}^{\circ}$ E. to the anchorage off Ross Island.

(All the above lights are exhibited from light towers 7 ft. high, painted white, which are easily distinguished in daylight. All bearings are true.)

Steamship communication with Calcutta, Rangoon, and Madras. The Lodge-Muirhead system of wireless telegraphy exists between Port Blair and Diamond Island (on the Burma coast).

There is a 1-ton derrick, and hand sheers to lift 10 tons. Small repairs are done.

Pilotage.—There are no licensed pilots, and no pilotage charges.

Port Charges.—There are no light or harbour dues. **Water** :—Fresh water can be obtained at 1 rupee per 100 gallons. **Provisions** :—There is a small marine store. **Hire of Lighters** :—For loading and discharging cargo, 1 rupee per ton of cargo.

PORT DICKSON.

Port Dickson (Arang Arang anchorage) is on the Malay Peninsula, in lat. $2^{\circ}35'$ N., long. $101^{\circ}48'$ E.

Accommodation.—There is good safe anchorage in 5 to 10 fathoms. On the bar there is 25 ft. water at low tide ; springs rise 10 ft. There is a pier with 23 ft. water alongside, where vessels can load and unload direct into railway trucks.

The Straits Settlements.

PORT SWETTENHAM.

Port Swettenham, in lat. $3^{\circ}0' N.$, long. $101^{\circ}23' E.$, is situated at the mouth of the Klang River.

Accommodation.—There is plenty of water here, with good anchorage in 6 fathoms $2\frac{1}{2}$ cables from the shore. Spring tides rise 14 ft. There is supposed to be a bar at the entrance, but recent soundings show $4\frac{1}{2}$ fathoms right across, i.e., south of the beacon; to the north there is a deep channel between beacon and mainland. Ocean-going vessels do not go alongside the wharves, but anchor.

The water area of the harbour is 1,000 acres, and the depth at the entrance 106 ft. at high springs. The depth in the port at ordinary low springs is 30 ft., and 44 ft. at high springs. The Government have three wharves, each 100 ft. long, with 6, 11, and $11\frac{1}{2}$ ft. alongside at ordinary low springs. The anchorage is on mud; very sheltered, but the tides are strong. A railway runs along the wharves, and cargo is worked directly into the trucks from lighters. There is a passenger pier 81 ft. long, with 12 ft. of water alongside at low springs. 600 tons can be dealt with per working day, and vessels of 3,000 tons reg. visit the port.

There are no port dues or light dues, and neither water nor coal is obtainable.

SINGAPORE.

Singapore is a free port, in lat. $1^{\circ}20' N.$, long. $103^{\circ}50' E.$ Distance from Liverpool by the Cape, 11,400 miles; by Suez Canal, 8,211 miles.

Population.—228,555.

Imports.—General merchandise.

Exports.—Gambier, tin, sago, tapioca, black pepper, tortoise-shell, mother-of-pearl, gutta-percha, nutmegs and mace, camphor, white pepper, gum mastic, coffee, sapan-wood, stick lac, rattans, Borneo rubber, cloves, cocoa, copra, gamboge, gums, sago flour, etc.

Accommodation.—Vessels of the largest size can anchor with safety in the Roads. The Tanjong Pagar and Borneo wharves have a length of quayage of 7,995 ft., with 40 ft. of water alongside at high tide, and 30 ft. at low. Sheer legs to lift 40 tons.

The Jardine-Matherson Wharf (leased to the Tanjong Pagar Dock Board) is 350 ft. long, with 30 ft. of water alongside at high tide, and 20 ft. at low.

The Keppel Harbour Wharves, belonging to the Tanjong Pagar Dock Board, are 2,670 ft. long, with a depth of water alongside of from 27 to 37 ft. at high tide, and 17 to 27 ft. at low tide. Sheers to lift 45 tons.

Repairs can be executed at the shipbuilding yards, castings of 12 tons can be made, and shafts of 12 in. can be forged.

The following are the dimensions of the dry docks and slips:—

Dock.	Length over all in feet.	Width of Entrance at High Springs Level in feet.	Depth on the Sill at High Springs in feet.
No. 1	345	$47\frac{1}{2}$	15
No. 2	459	65	19
Victoria	467	64	19
Albert	478	59	20
Patent Slip No. 1	175 (cradle)	—	—
“ “ No. 2	86	—	—
“ “ Government	60	—	—

The Straits Settlements—Singapore (continued).

The harbour is frequently visited by strong squalls, accompanied by heavy rains, commonly called "Sumatras," lasting for about half an hour. The islands around, however, prevent any heavy sea from getting up, and consequently the anchorage is quite free from any danger. There are a large number of fishing stakes in and around the harbour, which show a bright red light from sunset to sunrise. The harbour is infested by numbers of sharks and alligators, making bathing from ships highly dangerous. Chinese sampans can be hired to attend on ships in the roads, and launches may also be hired.

Port Limits.—From an obelisk built on Tanjong Katong in a straight line to an obelisk built on Peak Island along the northern shore of that island to its north-western point, thence to the northern point of Lazarus Island, thence along a straight line due west until it meets a straight line drawn north and south through the western beacon on Cyrene Shoal, thence northward along that line till it meets the Island of Singapore, thence eastward along the shores of the Island of Singapore to the obelisk at Tanjong Katong, including the mouth of the Singapore River as far as Kim Seng's Bridge and the mouth of the Canal as far as the Ordnance Bridge at one end and Outram Road at the other, also the mouth of the Rochore River as far as Kampong Kerbau Bridge, Kalang River as far as the iron bridge, Gelang River as far as Police Station, Gelang, and including the public streets, roads or highways, made or to be made, along the banks of these rivers, to the limits specified, and including all public landing places, stairs, piers, or jetties, made or to be made, along the shore of the island of Singapore.

Harbour Limits.—The limits of the navigable channel leading to the above port are as follows :—

From the mark placed at Batu Balayer (Lot's Wife), on the Island of Singapore, to a white beacon, No. 1, on the Cyrene Shoal; thence westerly to white beacon No. 2; thence westerly to white beacon No. 3; thence southerly to red beacon No. 4; thence easterly to red beacon No. 3; thence easterly to red beacon No. 2; thence easterly to red beacon No. 1; thence easterly to the north-westernmost point of Blakang Mati.

Port Regulations.—Every vessel arriving within signalling distance of the flag-staffs at the port and intending to enter the port shall have hoisted the ensign or flag of the country to which the vessel may belong, and the house flag, if any, or the Commercial Code signal letters of the vessel. The master of every vessel anchoring or going alongside any wharf shall forthwith report or cause to be reported the arrival of his vessel at the office of the Conservator of the Port, and in the case of British vessels and vessels belonging to a nation not having a Consul at the port shall produce to the Conservator the certificate of registry, and shall deposit with him the ship's articles.

The quarantine and sanitary anchorage is the anchorage abreast of Peak Island.

The gunpowder or explosive anchorage is off Pasir Panjang or Tanah Merah. Explosives may be loaded or discharged there. (Signal—Letter B with code pendant underneath.)

Fort Canning flagstaff and Dalhousie Monument in one to the buoy in 5 fathoms and beyond (N.W. by W.). Merchant vessels are prohibited

The Straits Settlements—Singapore (continued).

from anchoring on this bearing ; the width of this anchorage being not less than one cable.

The Conservator of the Port or his Deputy may direct and enforce the anchorage of all vessels. Vessels must shift berth or moor, if required to do so, without delay.

Vessels with dangerous petroleum (flash point below 73° Fahr.) must remain outside harbour limits. No petroleum may be landed without a permit. Vessels importing or exporting petroleum must give notice to master attendant.

Steam whistles may not be used except as a signal of danger, or in accordance with the rule of road regulations.

Ashes, ballast, rubbish, etc., may not be thrown overboard in the port under heavy penalty.

The use of search lights and projectors is prohibited.

Time Signals.—A ball is hoisted at 0 h. 55 m. 0 s. p.m. on Fort Canning flagstaff, and dropped at 1 h. 0 m. 0 s. p.m. standard time of the meridian of 105° E., equal to 18 h. 0 m. 0 s. Greenwich mean time, and 0 h. 55 m. 23 s. local mean time. The signal is also given at Mount Faber Observatory at the same time ; local mean time being 0 h. 55 m. 17 s.

Pilotage.—Compulsory. All vessels must take a pilot on entering or leaving New Harbour, Singapore, the channel leading thereto from the westward, and the South Channel, Penang. The licensed pilot's flag is white and red (horizontal), upper half white, with letter P in blue in the centre.

Table of fees for pilotage in the port of Singapore :—

	Steamers. Per foot draught of water. Dols. c.	Sailing vessels in tow. Dols. c.
Between the men-of-war anchorage and Tanjong Pagar, Borneo, or Jardine's wharves or Pulo Brani	1 20	1 50
Between the men-of-war anchorage and the New Harbour Dock, or P. & O. Co.'s wharf, or through as far as the Cyrene Shoal	1 50	1 80
Between Cyrene Shoal and the new Harbour Dock	1 20	1 50
Between Cyrene Shoal and any other part of the New Harbour	1 50	1 80
From one part to another of New Harbour	1 00	1 20
To or from the quarantine or gunpowder anchorages, an additional charge of	0 35	0 35
Between Sultan Shoal and Cyrene Shoal	0 35	0 35
Between the men-of-war anchorage or Cyrene Shoal and Sinki Channel	1 80	2 25
Between Cyrene Shoal and Freshwater Island	1 20	1 50
Between the men-of-war anchorage and Freshwater Island	1 50	1 80
Between Freshwater Island and New Harbour Dock	1 20	1 50
Between Freshwater Island and any other part of New Harbour	1 50	1 80

Note.—When it is necessary for a vessel to go through Keppel Harbour to turn, a single pilotage only to be charged. A fraction of a foot of draught to be counted as 1 foot.

No pilot is to take a ship in or out of New Harbour at night, unless the master or other agent guarantees to have whatever buoys and beacons the pilot considers necessary lighted up at the ship's expense, the charges for so doing being on the following scale :—Lighting all beacons to Sultan Shoal on both sides, and Meander Shoal buoys going west, 10 dols. Lighting all buoys for a vessel going east, 5 dols. It is optional with the pilot whether or not he takes a vessel out at night.

Port Charges.—There are no tonnage or harbour dues. **Light**

The Straits Settlements—Singapore (continued).

Dues :— $\frac{1}{4}$ a. per reg. ton in and $\frac{1}{4}$ a. per reg. ton out. **Bill of Health** :—5 dols. **Noting Protest** :—6 dols. **Wharfage Dues** :—On goods from Europe and America, 55 c. per ton ; from other countries, 45 c. per ton ; goods shipped over wharf, 45 c. per ton ; goods taken direct into vessel from lighters alongside wharf, 30 c. per ton. **Labour** :—Coolie hire, discharging coal vessels, 65 c. per ton, including wharfage, plus 20 dols. per gang working from 7 p.m. till midnight, and 30 dols. per gang working from 1 a.m. till 5.30 a.m. **Sampan Hire** :—40 c. per day. **Launch Hire** :—From shore to roads and back, from 3 to 5 dols. **Commissions** :—

On procuring freight, or advertising as the agent of owners or commanders—on the amount of freight, whether the same passes through the hands of the agents or not	5 per cent.
On chartering ships for other parties	2 $\frac{1}{2}$ "
On ship's disbursements	5 "
On " " when in funds	2 $\frac{1}{2}$ "
On collecting freights	2 $\frac{1}{2}$ "
On freight of vessels consigned to an agent in Singapore inwards (the freight having been paid at the port of loading), when the vessel is loaded outwards by another agent, or proceeds elsewhere for a cargo, in absence of any special agreement	2 $\frac{1}{2}$ "

Rates of Demurrage for Boats :—

	Dols.	c.	
1st night	—	—	free.
2nd	3	00	
3rd, 4th, and 5th nights	6	00	per night.
6th, 7th, 8th, 9th, and 10th nights	12	00	"
Afterwards	24	00	"

Demurrage on boats ordered off with cargo to a steamer the previous day by her agents and where the boat is alongside by noon on the day named, first night's demurrage to be paid by the cargo, but demurrage for the second and following nights to be paid wholly by the steamer.

Water :—Water is supplied to the shipping in the roads by tank vessels at 1 dol. per ton ; alongside the wharf, by the Tanjong Pagar Dock Board, at 85 cents per ton. **Provisions** :—Beef, 8 lb. for 1 dol. ; fuel, 8 dols. for 1,000 billets. **Coal** :—8 to 10 dols. per ton put into bunkers. 200 tons per hour can be put on board if urgently wanted. At an anchorage to the west of Blakan Mati, vessels with dangerous cargoes may be bunkered by the Tanjong Pagar Dock Board at 1 dol. per ton, including wharfage, i.e., 20 c. in addition to usual cargo for bunkering at wharf.

CHRISTMAS ISLAND.

Christmas Island is situated in lat. 10° S., long. 105° E., about 220 miles S. from Java Head. Its concessionaries are the Christmas Island Phosphate Company, Ltd., of Billiter Buildings, London. The island is about 2 miles long from east to west, and 10 miles wide from north to south, is densely wooded, and attains an altitude slightly over 1,100 ft. The cliff at the water's edge varies in height from 20 to 40 ft., is steep all round, so that a vessel might strike the face of the cliff before bringing up. The island was taken possession of in the name of the British Government in the year 1888, and is administered by the government of the Straits Settlements.

Population.—About 1,200.

Accommodation.—The only known anchorage is in Flying Fish Cove, situated at the N.E. of the island. The extent of the Cove is 5 cables by 2 $\frac{1}{2}$ cables, the measurements being taken from Smith Point to Loading

The Straits Settlements—Christmas Island (*continued*).

Point. Vessels load alongside jetties, moorings being laid for the purpose but fires should be kept banked and steam ready in case of emergency, as the cove is open to the sea. The Company's pilot is in attendance to berth vessels. Water can be obtained on the island. Wild pigeons and fish are very plentiful.

TURKEY IN ASIA.

The Turkish possessions in Asia have an area of 693,610 square miles, with a population of 17,683,500. This portion of the empire of the Sultan is of perhaps more interest to the shipping industry than the comparatively small dominions in Europe, facing as the component parts do on the Black Sea, Bosphorus, Sea of Marmora, Dardanelles, Ægean Sea, the Mediterranean, the Red Sea, and the Persian Gulf. The whole of these possessions are governed direct from Constantinople through Governors-General, and the shipping regulations, fully set out under the heading of **Turkey** in the European section of this work, apply to the whole of these Asiatic ports.

ACRE.

Acre is in lat. $32^{\circ}57' N.$, long. $35^{\circ}5' E.$

Population.—20,000.

Imports.—General merchandise.

Exports.—Wool, cotton, wheat, millet, olive oil, cotton seed, sesame seed, barley, etc.

Accommodation.—The depth of water inside the harbour is 12 fms., but the usual anchorage for vessels is in the bay, about $\frac{1}{4}$ mile from shore, in 6 fathoms, inside the reef, where small vessels are sheltered from winds from the W.N.W. round by E. to S.S.E. S.W. winds are dangerous, but these only blow from November to February, and during this period vessels generally take shelter under Mount Carmel, about 7 or 8 miles south. Large steamers do not go inside the reef.

Port Charges.—**Light Dues** :—20 paras per reg. ton up to 800 reg. tons; 10 paras per reg. ton for all above 800 reg. tons. **Discharging** :—Lighters, 5s. per trip. Goods are not allowed to be discharged between sunset and sunrise. Cargo is brought off in lighters at the merchant's risk and expense. **Labourers** :—2s. to 2s. 6d. per day. **Fresh Water** :—Scarce and dear. **Boat Hire** :—6s. per day. **Consular Fees** :—2s. 6d. for articles. **Brokerage** :—5 per cent. The interpreter, who acts also as a pilot and stevedore, is paid according to agreement, say from £3 10s. to £5 for the time the vessel remains.

ADALIA.

Adalia is in lat. $36^{\circ}53' N.$, long. $30^{\circ}45' E.$

Population.—30,000.

Imports.—Manufactured goods.

Exports.—Wheat, timber, firewood, and flour.

Accommodation.—During the summer there is excellent anchorage in from 15 to 20 fathoms about $\frac{1}{4}$ of a mile from the landing-place. During the winter months the anchorage is dangerous, owing to strong southerly gales. The port is only entered by small vessels of about 150 tons register, and then there is only accommodation for two or three at a time.

Port Charges.—**Health and Light Dues** :—1d. per ton register.

Turkey in Asia—Adalia (*continued*).

Loading and Discharging :—By lighters, 5s. per lighter. **Labour** :—2s. 6d. per man per day. **Ballast** :—Sand or gravel, 4s. per lighter of 8 to 10 tons weight delivered alongside.

AIVALI.

Aivali is in lat. $39^{\circ}19'$ N., long. $26^{\circ}42'$ E.

Population.—35,000.

Imports.—Manufactured and iron goods, colonial produce, and hides

Exports.—Olive oil, soap, valonea, cotton, and tanned skins.

Accommodation.—The port is only available for small coasting vessels, the depth of water on the bar being only from 3 to 6 ft. Vessel must be provided with a bill of health.

Port Charges.—**Anchorage Dues** :—4d. per 25 tons register
Quarantine Dues :—3d. per 20 tons. **Light Dues** :—1d. per ton. **Labour**
 —About 2s. per day.

ALAYA.

Alaya is in lat. $36^{\circ}35'$ N., long. $32^{\circ}3'$ E.

Population.—8,000.

Accommodation.—The anchorage is good during summer months but is dangerous during the winter owing to strong southerly gales. The outer anchorage is in 5 to 6 fathoms, with a sandy bottom; there is 12 ft. close to the landing place.

Port Charges.—**Health and Light Dues** :—1d. per ton reg. **Labour**
 —2s. 6d. per man per day. **Ballast** :—Sand or gravel, 4s. per lighter of 8 to 10 tons, delivered alongside. **Provisions** :—Meat and vegetables can be obtained.

ALEXANDRETTA.

Alexandretta, or Iskenderun, in lat. $36^{\circ}36'$ N., long. $36^{\circ}10'$ E., is the port of Aleppo, South Armenia, and of Mesopotamia.

Population.—12,000.

Imports.—Manchester and European goods, silk, sugar, coffee, rice, salt, copper, lead, zinc, bar tin, tin plates, iron, indigo, drugs, tobacco, petroleum, etc.

Exports.—Native manufactures, silk cocoons, cotton, wool, galls, gum, wax, berries, sesame seed, wheat, barley, oats, maize, dari seed, soap, pistachios, butter, olive oil, skins, peas, liquorice root, copper ore, oranges, cattle, etc.

Accommodation.—The anchorage is excellent, Alexandretta being the only natural harbour on the coast of Syria and Caramania capable of containing a large fleet in safety. The usual anchorage is in 5 to 8 fathoms, about $\frac{1}{2}$ a mile from the shore. The town is fairly healthy. Cargo and mail steamers call here regularly. The port has postal and telegraphic communication with all parts of the world. Lighters of 15 to 20 tons are used for loading and discharging cargo. There are no tugs and no cranes.

Pilotage.—If required, 10s. in and 10s. out.

Turkey in Asia—Alexandretta (continued).

Port Charges.—There are no harbour dues. **Sanitary Dues :—** 0 paras per reg. ton up to 500 reg. tons ; 12 paras for every reg. ton over 500 reg. tons up to 1,000 reg. tons, and 8 paras for every reg. ton over 1,000 reg. tons. Steamers calling at several Ottoman ports only pay these dues once, i.e., at the first port of call, but in that case the bill of health must be issued for the final Ottoman port of destination. **Light Dues :—** 20 paras per reg. ton up to 800 reg. tons ; 10 paras for every reg. ton over 800 reg. tons ; 10 per cent. discount is deducted from the total amount. These dues are payable at every port of call. **Water :—** Fresh water is plentiful and very good, 3s. per ton put on board. **Provisions :—** Good. **Ballast :—** 2s. 6d. per ton put on board.

Stevedore :— Discharging and loading portion of cargo : stevedore, 4s. per day ; labourers, 2s. each per day. Full cargo, discharging coal, 7d. per ton ; loading grain, 5½d. to 6d. per ton.

Brokerage :— Regular steamers, 2½ per cent. commission on freight outwards ; and 5 per cent. commission on homeward. Occasional steamers, entrance and clearance, £5 5s. Chartering, ⅓ of 5 per cent. brokerage to Alexandretta broker, and in several cases 2 per cent. commission address to the charterer.

Pro Forma Charges on a steamer of 1,600 tons reg. at Alexandretta :—

	£	s.	d.
Sanitary dues, 520 piastres. Exc. 113·75 per £	4	11	5
Light dues, 540 piastres. Exc. 113·75 per £	4	15	0
Articles	0	2	6
Labourers discharging, 300 tons of general goods, forty men at 2s. each per day	4	0	0
Stevedore, one at 4s.	0	4	0
Loading, 400 tons, forty men at 2s.	4	0	0
One stevedore at 4s.	0	4	0
2½ per cent. commission on outward freight, on £300	7	10	0
5 per cent. commission on homeward freight, on £400	20	0	0
Boat hire, 6 days at 6s. per day	1	16	0
	£47	2	11

AMASTRA.

Amastra is in lat. 41°43' N., long. 32°23' E.

Population.—About 2,500.

Accommodation.—The roadstead has a depth of 3 to 4 fathoms, about a ¼ of a mile from the slip, at the end of which there is about 10 ft. This roadstead is on the W. side of the peninsula on which the town is situated, but open to all winds from N.W. to W. There is another anchorage on the E. side in 6 to 8 fathoms.

AYAS BAY.

Ayas Bay, in lat. 36°48' N., long. 35°47' E., provides good anchorage in 4 to 10 fathoms, with a stiff mud bottom. Vessels are sheltered from all but E. and S.E. winds. Care is necessary when approaching the banks. There is no lighthouse, but dues are chargeable on the same basis as at Alexandretta. There are no harbour dues. The only export is grain.

Turkey in Asia.

BASRAH.

Basrah, Bussorah, or Basra, in lat. $30^{\circ}22' N.$, long. $47^{\circ}49' E.$, is situated 70 miles up the River Shat-al-Arab.

Population.—About 40,000.

Imports.—Cotton and woollen cloths, coal, coffee, copper, gunnies, indigo, petroleum, matches, sugar, wood, yarn, and twist.

Exports.—Barley, wheat, opium, dates, carpets, hides, horses, liquorice, paddy, seeds, wool, gall-nuts, ghee, and mohair.

Accommodation.—Vessels drawing 18 ft. can ascend as far as Basrah. The depth of water on the bar is 8 ft. at low water, spring tides, with a range of from 8 to 9 ft. at the floods. There is, therefore, about 17 ft. of water on the bar at high water spring tides, and 15 ft. at neaps. The entrance was last surveyed some 10 or 12 years ago, when a new channel giving 2 ft. more water was found. A chart has been published, but no further steps have been taken, by buoying or otherwise, to make this channel practicable. Inside the bar as far as Basrah, the least depth in mid-channel is 24 ft. The town lies 3 miles from the river, and is approached by a small creek. Ships anchor in 4 to 5 fathoms in mid-channel, opposite the entrance of the creek. Cargo is carried up to the town by native vessels. The heat in summer is intense, and the town is considered extremely unhealthy from July to October. There is a dry dock 230 ft. long, 50 ft. wide at the entrance, and 4 ft. on the sill. The depth on the sill can be increased to 6 ft. Small repairs can be done.

Pilotage.—Necessary, but not compulsory. Pilots are obtained at Bushire.

Port Charges.—Entrance and Clearance Fees:—None. **Tonnage Dues:**—20 paras per ton for vessels up to 500 tons; 12 paras for every ton above 500 tons up to 1,000 tons; and 8 paras for every ton above 1,000 tons. **Manifests** are accepted by the Customs in English. **Discharging or Loading** cargo costs from 1s. to 2s. per ton. **Labour:**—1s. to 2s. per day. **Ballast:**—Clay, 1s. 8d. to 2s. per ton alongside. **Water:**—Free, drawn from alongside. **Provisions:**—Mutton, 4d. per lb.; bread, 1d. per lb. Biscuits and salt provisions are not procurable.

Quarantine.—Vessels should be provided with bills of health from port of departure and from the last port they touch at. Bills of health are supplied at 10s. each to outgoing vessels by the Consulate on production of a Turkish bill of health. No communication with the shore is permitted until pratique has been received, except with the quarantine station. All vessels touching at infected ports undergo 48 h. to 5 days' quarantine, beginning from date of arrival at Basrah. Steamers carrying passengers are required by Ottoman quarantine regulations to have a doctor on board. **Station Dues**, i.e., for anchoring in quarantine, vessels of from 1 to 100 tons 10 ps. gold; 101 to 200 tons, 20 ps.; 201 to 400 tons, 30 ps.; 401 and over, 40 ps.

BEYROUT.

Beyrout, or Beirut, the principal port of Syria, is in lat. $33^{\circ}53' N.$, long. $35^{\circ}31' E.$

Population.—118,800.

Turkey in Asia—Beyrout (continued).

Imports.—Muslins, cottons, tin, iron, coal, hardware, timber, rice, and West Indian produce.

Exports.—Cotton, silk, madder, galls, wine, oil, barley, wheat, wool, etc.

Accommodation.—Beyrout is not a tidal port. A new harbour has been built covering an area of 24 acres, with a depth varying from 9½ ft. at the inner end, to 42 ft. at the entrance. The width of the entrance is 147½ yards. The harbour is capable of accommodating eighteen steamers of from 1,000 to 3,000 tons, besides numerous small craft. There is no bar, and steamers often anchor outside the harbour. Inside the harbour all vessels must be moored. Loading and discharging in all cases is done by lighters of 15 to 30 tons capacity. There is a crane at the Custom House to lift 2 to 3 tons, and a floating derrick to lift 7 to 8 tons, belonging to the Port Company.

Pilotage.—A harbour pilot is supplied free (if he remains in his boat) by the port authorities, to steer vessels to their moorings; if the pilot is taken on board, there is a charge of £1.

Port Charges.—Harbour Dues :—Steamers, 10 paras per ton reg. for 3 days; sailing vessels, 10 paras per ton reg. for 8 days. The harbour authorities have a right to charge half harbour dues on all vessels anchoring outside the harbour within a radius measuring 1,503 yards (1,375 metres) in length, and 901 yards (825 metres) in breadth, the space above mentioned being protected to some extent by the breakwater of the harbour proper.

Light Dues :—18 paras per ton reg. on vessels up to 800 tons; 9 paras per ton reg. on any excess of 800 tons.

Sanitary Dues :—20 paras per ton reg. on vessels from 1 to 500 tons; 12 paras from 501 to 1,000 tons; 8 paras from 1,001 tons upwards. This charge is paid at the first Ottoman port of call only. **Port Dues :**—Paid on all goods landed and shipped according to the class of the goods. **Tugs :**—The harbour authorities possess one tug. **Discharging :**—Coal, railway materials, heavy lifts, etc., are discharged alongside the quay, for which a charge of 60 piastres (11s.) per day is made. **Agency Fee :**—£5 5s. **Stevedoring :**—On general cargo, coal, rice, etc., 6d. per ton. **Bunkering :**—Not recommended at Beyrout, coal being about 35s. per ton. **Ballast :**—Sand, 1 franc per ton, on board. **Water :**—1s. per ton, on board. **Boat Hire :**—1s. per day.

Quarantine.—Vessels in quarantine pay the following dues for allotment of special stations for anchorage :—10 paras per ton reg. per day on vessels from 1 to 100 tons; 20 paras from 101 to 200 tons; 30 paras from 201 to 400 tons; 40 paras from 401 tons and upwards. Two guards, who receive 25 piastres each per day, are set over each vessel discharging or loading in quarantine.

BUDRUM.

Budrum is in lat. 37°3' N., long. 27°28' E.

Population.—6,000.

Exports.—Dried figs and animals.

Accommodation.—The harbour is about a ¼ of a mile wide, with an entrance of 5 cable-lengths. It is well sheltered, being almost

Turkey in Asia—Budrum (continued).

land-locked. The harbour has shoaled considerably, and is only fit for small vessels. The anchorage, in the outer bay, is in 11 fathoms, about 200 yards from the town. It is exposed to winds from S.W. round to S.E.

Pilotage.—Not compulsory.

Port Charges.—Same as other Turkish ports. **Light Dues:**— $\frac{1}{4}$ piastre per reg. ton up to 800 reg. tons; above 800 reg. tons, a reduction of 50 per cent. **Bill of Health:**—On a vessel of 500 tons reg. at $\frac{1}{2}$ piastre per reg. ton per voyage = 250 piastres.

CASTELLORIZO.

Castellorizo is situated on Rhodes Island.

Population.—8,000.

Imports.—General merchandise.

Accommodation.—The harbour is an excellent one, there being an average depth of from 10 to 12 fathoms. In some parts of the harbour, and at the entrance, the depth is from 30 to 50 fathoms. There is no wharfage.

Pilotage.—Not necessary.

Port Charges.—**Entrance Fees:**—Vessels carrying the Turkish flag 1 fr. per visit, other vessels free. **Clearance Fees:**—15 paras per ton. **Light Dues:**—No light dues are imposed here, but a vessel putting in at Castellorizo pay those charged by the island authorities, 15 paras per reg. ton. **Ballast:**—May be obtained free by employing 3 men and a ballast lighter. **Labour:**—From 3 to 4 fr. per day. **Brokerage:**—2 per cent. **Boats:**—May be hired at reasonable rates.

CHIOS.

Chios, in lat. $38^{\circ}20'$ N., long. $26^{\circ}5'$ E., is an island lying off the coast of Smyrna.

Population.—60,000.

Imports.—Hides, coffee, rice, sugar, cotton and woollen goods, etc.

Exports.—Oranges, gum-mastic, olive oil, almonds, and mandarins

Accommodation.—The depth of the anchorage varies between 2 and 8 metres ($6\frac{1}{2}$ to 26 ft.), and is unaffected by tides.

Pilotage.—Optional.

Port Charges.—**Light Dues:**— $12\frac{1}{2}$ c. per ton with a discount of 10 per cent. **Mooring:**— $12\frac{1}{2}$ c. per ton up to 100 tons; for each ton over 100 tons, $6\frac{1}{4}$ c. **Boat Hire:**—20 fr. per day. **Ballast:**—1 fr. per ton.

DATCHA.

Datcha Bay, in lat. $36^{\circ}46'$ N., long. $27^{\circ}46'$ E., is on the north side of the Gulf of Doris.

Accommodation.—Opposite the Custom House there is good anchorage in 18 ft. The town of Datcha is about $1\frac{1}{2}$ miles inland.

DERINDJI.

Derindji, or Derinji, in lat. $40^{\circ}48'$ N., long. $29^{\circ}56'$ E., is about 4 miles distant from Ismid.

Imports.—Cotton, yarn, colonial goods, hardware, metals, flour, etc.

Exports.—Cereals, minerals, tobacco, sheep-wool, mohair, skins opium, raw silk, etc.

Turkey in Asia—Derindji (*continued*).

Accommodation.—The construction of a port by the Ottoman Anatolian Railway Co. has greatly facilitated the loading and discharging of steamers. A grain elevator has been erected, and steamers of considerable size can now load alongside the quays and wharves. In charters of recent date Ismid and Derindji are considered as one port. There is railway communication with Constantinople.

Stevedore :—Loading and discharging, 10*d.* to 1*s.* per ton. **Clearance** is made at Constantinople by charterer or agent.

FINIKA.

Finika, or Phœneka, is in lat. 36°19' N., long. 30°10' E.

Population.—2,500.

Imports.—Hardware, bags, colonial produce, and manufactured goods.

Exports.—Wheat, barley, sesame seeds, Indian corn, white corn, kins, chrome, and manganese.

Accommodation.—There is no harbour, and vessels have to anchor at a distance of 1 mile from the shore on a sandy bottom, there being very little depth of water. When the N.E. and S. winds blow, vessels lying at anchor in the port are obliged to seek refuge in the Bay of Yeronda, which is a distance of 3½ miles from Finika. At a distance of 14 miles from Finika, and just opposite Cap Kelidonia, is Caros Bay, one of the finest harbours in the district, and under the control of the Custom House of Finika. Steamers calling there for chrome and manganese ores cast anchor in 16 fathoms of water, at a distance of 150 metres (491 ft.) from the shore.

Pilotage.—Not compulsory. According to agreement.

Port Charges.—**Boat Hire** :—In fine weather, 1*s.* per head ; 3*s.* when bad. **Ballast** :—Per ton, 1*s.* 8*d.* **Labour** :—On board, 3*s.* 4*d.* **Brokerage** :—According to agreement. **Loading** :—Ore, 10*d.* per ton ; trimming, about £1 per day, or £6 per 1,000 tons.

GAZA.

Gaza, the port, is in lat. 31°30' N., long. 34°28' E., the town being about 2 miles inland.

Exports.—Wheat, barley, and dari seed.

Accommodation.—The usual anchorage is in 7 fathoms of water, sandy bottom, about 1 mile from the shore. Anchors should be lifted every 7 or 8 days. From May to October the anchorage may be considered safe, the best period being from August to the end of October, when the sea is nearly always calm. At other times during the year, when west winds prevail, vessels are sometimes prevented from loading for days together. Loading is done by means of boats each carrying from 30 to 40 quarters in sacks. During favourable weather these boats can load each day 6,400 kkas (okka=2½ lb.) ; in bad weather only half that weight.

Port Charges.—**Consular Fees** :—10*s.* ; articles, 2*s.* 6*d.* **Loading** :—The expense of loading is invariably borne by the charterers. Shipmasters are advised not to employ their own boats in loading, it being better to engage the native craft, in the management of which the Arabs are very expert. There are a few of these boats at Gaza, but the majority are from Jaffa.

Water :—Good water can be obtained from two wells on the shore. **Provi-**

Turkey in Asia—Gaza (continued).

sions, in the form of beef, mutton, and vegetables, are plentiful, but no bread can be obtained.

GHEMLEK.

Ghemlek is at the head of Moudania Bay, in lat. $40^{\circ}27'$ N., long. $29^{\circ}10'$ E.

Population.—8,000.

Imports.—Coal, salt, steel, iron, lead, and potash.

Exports.—Olive oil, olives, chrome ore, wheat, crude antimony barley, salted fish in barrels, sardines, etc.

Accommodation.—It is a safe port. When the wind is strong from the W. it causes a heavy sea, but there is good holding ground in the offing and good depth of water for vessels to ride out the gale. There is no danger with the wind from any other point. In the S.E. angle of the port, inside the arsenal point, there is a bight sheltered from all winds, and vessels can discharge and load alongside a wharf in a depth of from 8 to 10 metres (26 to $32\frac{1}{2}$ ft.), close to the shore and Custom House. The depth of water at the pier end is 6 metres (19 ft. 8 in.), and there is 15 fathoms in the outer anchorage.

Port Charges.—All harbour dues, except lighthouse expenses amount to 0.13 piastres per ton. **Labour:**—About 1s. 6d.

Pro Forma Charges on a vessel of 375 tons reg., ballast in and cargo of chrome ore out:—

	Piastres.
Bill of health	32 00
Anchorage dues at 0.13 piastres per ton	48 75
Gratuity to harbour master for permission to discharge ballast in the harbour	100 00
Light dues, payable at Dardanelles, Gallipoli, or Lampsaki	775 00
	955 75 = £8 11s. 7d.

Dunnage wood is plentiful and cheap. The ore is loaded from baskets, which the labourers carry on board on their backs. A vessel of 257 tons reg. with coal in and ore out, was 30 days loading and discharging. The total expenses of this vessel amounted to about £16, including provisions, as well as regular port charges. Another vessel of 1,200 tons was only 6 days loading.

HAIDAR PACHA.

Haidar Pacha, in lat. $41^{\circ}0'$ N., long. $29^{\circ}4'$ E., is situated on the Scutar shore, opposite Constantinople, and is the terminal port of the Anatolian Railway.

Accommodation.—The harbour is protected by a breakwater 1,966 ft. long, and there is a depth of 26 ft. There are two wharves, at right angles to each other, capable of accommodating two cargo steamer and a number of small barges (mahunas). There is a grain elevator capable of dealing with 400 tons per hour, with storage room for 27,000 tons. There is an electric crane with a lifting power of 35 tons, and electric trolleys on the dock frontage. The harbour is lit by electric light. The length of quayage is 954 ft.

Port Charges.—Harbour dues, 20 centimes per reg. ton, which includes towage for berthing and leaving. **Mooring:**—All vessels pay 1 f

Turkey in Asia—Haidar Pacha (*continued*).

per ton reg. for the first eight days. After eight days the rate is raised by 10 per cent., subject to the following reductions on the first charge, viz. :—10 centimes per reg. ton for ships fully loaded with coal, cereals, wood, or building materials; 20 centimes per reg. ton for all other ships. **Loading and Discharging** :—A maximum rate of 2 fr. per ton for the use of wagons is levied.

HAIFFA.

Haiffa, or Caiffa, in lat. $32^{\circ}49'$ N., long. $34^{\circ}59'$ E., is a small town at the foot of Mount Carmel, and about 8 miles west of the Bay St. Jean d'Acre.

Population.—12,000.

Imports.—Hardware, glassware, cloth, beverages, iron, tiles, chairs, safes, confectionery, biscuits, cement, rice, tea, and coffee.

Exports.—Cotton, oils, soap, sesame seed, dari, wheat, millet, barley, beans, lentils, etc.

Accommodation.—The anchorage is in 26 to 33 ft., one-third of a mile off the town, and is said to be one of the best on the coast; it is safe from N.E., E., S., or S.W. winds. The only dangerous winds are those from the N. and N.W. The mail steamers of the Russian Navigation Co. visit Caiffa regularly twice a week. There is a small landing pier, but vessels load and discharge by lighters. No coal can be obtained.

Port Charges.—**Sanitary and Light Dues** :—See **Beyrout**. **Mani-fest** :—6 piastres.

HODEIDA.

Hodeida is in lat. $14^{\circ}49'$ N., long. $42^{\circ}55'$ E., and is situated on the Red Sea coast of Arabia.

Population.—About 60,000.

Imports.—Rice, grain, flour, glue, dates, sugar, spices, tobacco, piece goods, kerosene oil, iron, hardware, metals, timber, stationery, etc.

Exports.—Coffee, skins and hides, senna, shark fins, myrrh, dhurra jowari (a kind of millet), and sesame, or teel seeds.

Accommodation.—The anchorage for vessels drawing 18 ft. is about 2 miles off shore. Vessels of 22 ft. draught anchor above 3 miles out.

Provisions.—Cheap and plentiful, but water is dear. There is now a local water-condensing plant, and even ice can be supplied if ordered in time.

ISMID.

Ismid, in lat. $40^{\circ}48'$ N., long. $29^{\circ}56'$ E., is at the head of the gulf of the same name in the Sea of Marmora.

Population.—15,000.

Accommodation.—There is a good anchorage in 5 to 12 fathoms close to the shore. The export of grain has increased recently owing to the extension of the Ottoman Anatolian Railway to Angora and Koniah, two large grain producing districts. (See also **Derindji**.)

Turkey in Asia.

JAFFA, OR YAFFA.

Jaffa, in lat. 32°3' N., long. 34°47' E., is the seaport of Jerusalem.

Population.—45,000.

Imports.—Cotton manufactures, Cyprus wines and brandy, coal, timber, tiles, salt, flour, sugar, rice, coffee, petroleum, hardware, drugs, fancy goods, dry goods, provisions, cloth, yarns, iron, ironware, oil-engines and machinery.

Exports.—Wheat, wool, sesame seed, oranges, colocynth, lupins, wines, olive oil, soap, maize, bones, hides, lentils, beans, and fruit.

Accommodation.—The anchorage is in an open roadstead on a rocky bottom, the best position in summer being in 8 fathoms, and in winter from 10 to 11 fathoms. A reef runs in front of the town and affords some shelter for small vessels and boats. The port, although hot in summer, is not unhealthy. It is an unsafe anchorage in winter time, and during the seasons of the year when rough W. and N.W. winds prevail.

Pilotage.—None necessary.

Port Charges.—**Light Dues** :—For a vessel of 100 to 800 tons, 20 paras per ton; exceeding 800 tons, 10 paras for each ton in excess, less 10 per cent. reduction on the total amount. **Sanitary Dues** :—For a vessel of 500 tons, 20 paras per ton; if exceeding 500 tons, 12 paras for each ton in excess up to 1,000 tons; if exceeding 1,000 tons, 8 paras per ton in excess. Light dues are levied at every port (Turkish), whilst pratique or sanitary dues are to be paid in one Turkish port only, provided the ship's bill of health be viséd to Constantinople. Foreign vessels pay no fee to the captain of the port. **Consular Charges** :—2s. 6d. if the vessel remains 48 hours in port, and 10s. for a bill of health if going to a British port. Interpreters charge about 5s. per day. **Loading and Unloading** :—A steamer can load or unload in fine weather 250 tons, and a sailing vessel 125 tons, per day. The usual hire of lighters for loading or unloading cargo is 26 piastres for each lighter, the capacity of which is about 8 tons. These charges only hold good in fine weather, and it would be better for masters, before making any agreement with native lightermen, to take the advice of the British Vice-Consul, or that of Lloyd's agent, to prevent misunderstanding or disputes. **Stevedore** :—For loading or discharging cargo, 4d. to 5d. per ton. **Labourers** :—From 2s. to 2s. 6d. per day. **Brokerage** :—Entering and clearing, £5. **Provisions** :—Beef and mutton, 4½d. per lb.; vegetables cheap. **Water** :—Fresh water may be obtained at 1s. 4d. per ton alongside. **Ballast** :—Sand if taken by ship's boat from the shore, free. If by boat carrying from 6 to 8 tons, then 3s. to 3s. 6d. per boat. **Coal** :—Coal may always be obtained a stock of from 1,000 to 2,000 tons is constantly kept.

Pro Forma Charges on a steamer of 750 tons net reg., with cargo of grain from Jaffa to Marseilles:—

	£	s.	d.
Light dues	3	1	5
Health dues	2	15	5
Labourage	9	8	0
French Consul's visé on bill of health	0	9	10
British Consul's charge on steamer that remains 48 hours	0	10	0
Brokerage, entering and clearing	5	0	0

£21 4 8

Turkey in Asia.

JIDDAH.

Jiddah, in lat. $21^{\circ}23' N.$, long. $39^{\circ}11' E.$, is about 55 miles W. of Mecca, of which city it is the port.

Population.—About 20,000.

Imports.—Cereals, rice, manufactures and colonial products of every description, metals, etc.

Exports.—Hides, skins, gums, senna, and mother-of-pearl shells.

Accommodation.—The harbour is difficult of entrance, and is rarely attempted without a pilot. Once in, ships can lie in perfect safety in any weather, it being sheltered on all sides by reefs. The principal reef is 5 miles long, lying parallel to the shore at a distance of a mile and a half, and having but three entrances, one about the centre, which is well beacons, and which is nearly always used; the second near the north end, which is continued to the shore, turning to the right and forming a bay by which native craft from the north enter. The third entrance is near the south, and is seldom used.

The portion of the harbour occupied by the vessels is 2 miles in length, half a mile in its greatest breadth, narrowing at certain places to 300 yards. The actual roadstead is much longer, there being good anchorage for 5 miles in length, but for convenience the vessels anchor as near the town as possible. They can also anchor with safety outside the long reef, there being reefs extending for 12 miles. The harbour lies nearly parallel to the town, north and south. It has a depth of from 3 to 17 fathoms. It is not good holding ground, being coral; but, as there is never any swell, there is no danger of a ship dragging her anchors. The great disadvantage of the harbour is its distance from the quay, for though not more than a mile and a quarter in actual distance, the intervening space is so intersected with reefs as to render it, almost in all winds, equal to at least four miles, in addition to which at times there is so little water that the cargo boats frequently ground, and the goods have to be dispersed over several boats. Accidents are numerous. There is a small crane, but the quay is primitive.

Port Charges.—The only port charges are quarantine dues. **Import Duty** :—11 per cent. *ad valorem*. **Export Duty** :—1 per cent. **Water** :—A condenser has recently been established, and supplies water at about $\frac{1}{2}d.$ per gallon, plus portorage. **Provisions** :—Beef, mutton, and fresh provisions can be obtained, but are dear. **Labourers** :— $1\frac{3}{4}$ rupees = $37\frac{1}{2}$ piastres each.

Pro Forma Charges on a steamer of 1,500 tons reg., with an inward cargo of wheat or rice, leaving in ballast :—

	£	s.	d.
Health fees	2	10	0
Medical visit	1	1	0
Consular fees	0	2	6
Pilot, in and out	4	0	0
Gratuity to chief of lightermen	1	0	0
Gratuity to chief of coolies on shore, discharging lighters	0	10	0
Gratuity to tally clerks	1	0	0
Agency's boat hire	1	10	0
Delivery orders, stationery, and postage	0	10	6
Agency fee	10	10	0

(Exclusive of labour.)

£22 14 0

*Turkey in Asia.***KARADASH.**

Karadash, or Kaladash, in lat. $36^{\circ}34'$ N., long. $35^{\circ}22'$ E., is at the entrance to the Gulf of Alexandretta.

Exports.—Wheat, barley, and cotton.

Accommodation.—In the roadstead about 1 mile off the town there is an open anchorage in 5 to 6 fathoms. The port itself can only accommodate vessels of 150 tons, and whenever the wind is from the S.E. round to the W.S.W. they are obliged to proceed to sea at once. Charters always run: "Merchants to put cargo alongside at their own expense." There are no quays or conveniences for loading.

Port Charges.—**Light Dues and Sanitary Dues.**—See **Alexandretta.** Anchorage dues, 4s. per ship.

KASTRO.

Kastro, or Scio, in lat. $38^{\circ}24'$ N., long. $26^{\circ}8'$ E., is on the E. side of the island of Chios.

Exports.—Fruit, gum mastic, olives, olive oil, and almonds.

Accommodation.—The port is formed by two moles enclosing a small bay in which the average depth is from 12 to 23 ft. Small vessels anchor with their heads to the N. and sterns fast to the S. shore. The best anchorage for larger vessels is in 12 fathoms on a mud bottom, three-quarters of a mile N.E. of the citadel.

KERASOUND.

Kerasound, in lat. $40^{\circ}54'$ N., long. $38^{\circ}23'$ E., is about 27 miles east of Vona.

Population.—10,000.

Imports.—Manufactured goods, iron, tobacco, coffee, sugar, soap, biscuits, leather, and cloths.

Exports.—Nuts, corn, wax, skins, butter, etc.

Accommodation.—The anchorage is sheltered from westerly winds.

Port Charges.—Same as **Trebizonde.**

LATAKIYAH.

Latakiah is in lat. $35^{\circ}32'$ N., long. $35^{\circ}47'$ E.

Population.—About 10,000.

Exports.—Wool, sesame, barley, tobacco, cotton, and sponges.

Accommodation.—The anchorage is in 6 to 7 fathoms, about three cable-lengths off the shore. It is an open roadstead, and during the winter season communication is difficult and sometimes dangerous. Vessels of 11 ft. draught can anchor close to the jetties which form the harbour.

Port Charges.—Same as at **Beyrout.**

MAKRY.

Makry, or Makri, in lat. $36^{\circ}38'$ N., long. $29^{\circ}12'$ E., is situated at the head of a small inlet on the S.E. shore of the Gulf of Makry.

Turkey in Asia—Makry (*continued*).

Exports.—Indian corn, wheat, and valonea.

Accommodation.—There is from 4 to 8 fathoms of water in the inner harbour, which is landlocked and quite safe. Vessels load alongside the mole in about 2 fathoms. During the summer months, May to October, the place is practically deserted, being very unhealthy.

Port Charges.—**Bill of Health** :— $\frac{1}{2}$ piastre per reg. ton. **Stevedore** :—7s. per day, labourers 3s. 6d. per day. **Water** :—Excellent and in abundance. **Provisions** :—Cheap and plentiful; fowls 8d. each, eggs 4d. per dozen; no vegetables.

MARMARICE.

Marmarice is in lat. 36°53' N., long. 28°20' E.

It is one of the finest harbours in the Mediterranean, being perfectly landlocked, with good anchorage in from 7 to 20 fathoms, on good holding ground. When the wind is from S., however, it is almost impossible for sailing vessels to get out of the harbour, owing to the narrow passage.

MERSINA.

Mersina is in lat. 36°58' N., long. 34°37' E.

Population.—20,000.

Imports.—Machinery, petroleum, nails, tiles, coffee, sugar, rice, iron, wine, spirits, tools, Manchester goods, leather, soap, etc.

Exports.—Cotton-seed, wheat, barley, oats, sesame seed, linseed, wool, hides, metals, locust beans, timber, tar, and all kinds of dari seed.

Accommodation.—The anchorage is in 5 fathoms, with good holding ground, the bottom being mud and sand, about half a mile from, but abreast of, the pier. The anchorage is exposed to winds from S.W. to E.S.E., but they seldom blow home. E.S.E. winds get up suddenly, and then Mersina beach is a dangerous lee shore. There are four piers, with a depth of from 7 to 10 ft. There is a crane on one of the piers to lift 5 tons. There are three small tugs, which unload from 200 to 250 tons daily, or load 350 to 500 tons daily.

Port Charges.—**Sanitary Dues** :—Up to 500 reg. tons, 20 paras per reg. ton; for each reg. ton above 500 to 1,000 reg. tons, 12 paras; and for every reg. ton above 1,000, 8 paras. **Light Dues** :—Up to 800 reg. tons, 18 paras per reg. ton, and 9 paras for every reg. ton above 800. **Labour** :—Foreman, 27 piastres per day, labourers 12 piastres per day. **Brokerage** :—Commission on outward cargo, 5 per cent. **Water** :—Abundant supplies may be obtained at the end of the Custom House pier.

MITYLENE.

Mitylene is in lat. 39°4' N., long. 26°34' E.

Population.—150,000.

Accommodation.—This is the chief loading port on Mitylene island. It has two artificial harbours, one at the N. and the other at the S. of the town. At the S. port vessels load oil; the harbour can only accommodate vessels up to 700 tons, those above anchor outside the port.

Pilotage.—Optional. If taken, then by agreement, usually about 120 piastres in and out.

Turkey in Asia—Mitylene *(continued)*.

Port Charges.—Sanitary Dues :—20 paras per reg. ton up to 500 reg. tons ; 12 paras per reg. ton for each reg. ton above 500 and up to 1,000 reg. tons ; 8 paras per reg. ton for each reg. ton above 1,000 reg. tons. **Light Dues :**—18 paras per reg. ton up to 800 reg. tons, and 9 paras for each reg. ton above 800. **Ballast :**—7 piastres per ton. **Brokerage :**—Entrance, 60 piastres, clearance, 60 piastres. **Commission :**—2 per cent. on freight engaged. **Labourers :**—Loading or discharging, 15 piastres per day. **Stevedores :**—In loading oil, stevedores are engaged from Smyrna at 8s. 4d. per day, payable from the time of leaving Smyrna to the day of arrival back.

MOUDROS.

Moudros, in lat. $39^{\circ}51'$ N., long. $25^{\circ}17'$ E., is at the head of the bay of the same name, on the S. coast of the island of Limnos.

Export.—Barley. The trade begins in August.

Accommodation.—The harbour is commodious, well sheltered, and has good holding ground. The usual anchorage is in 4 to 5 fathoms, about a quarter of a mile from the shore. Ballast may be thrown overboard in 7 fathoms. Captains must present their bill of health to the harbour master. There is postal and telegraphic communication via Kastro. Should telegrams be sent by special messenger, a charge of 36 piastres is made. Loading is done by means of lighters of 2 tons capacity.

Pilotage.—Pilotage is unnecessary.

Port Charges.—Ligherage :—40 piastres per trip. **Labourers :**—10 piastres per day. **Fresh Water :**—Very scarce. **Provisions :**—Sheep are plentiful, but beef and vegetables are dear.

MOCHA.

Mocha, in lat. $13^{\circ}19'$ N., long. $43^{\circ}13'$ E., is about 40 miles N. of the Strait of Bab-el-Mandeb.

Population.—About 2,000.

No vessels call here now.

NISYROS.

Nisyros Island is in lat. $36^{\circ}35'$ N., long. $27^{\circ}12'$ E.

The town is on the N.W. of the island, and has an open roadstead with a depth of 4 fathoms of water close to the shore.

OUNIEH.

Ounieh, or Uniah, in lat. $41^{\circ}7'$ N., long. $37^{\circ}17'$ E., is 17 miles west of Cape Yasouan. The anchorage is three-quarters of a mile from the town, in 5 fathoms on sand, gradually shoaling towards the shore.

PANDERMA.

Panderma, in lat. $40^{\circ}20'$ N., long. $28^{\circ}0'$ E., is about 63 miles S.W. of Constantinople, in an open bay.

Population.—22,000.

Turkey in Asia—Panderma (continued).

Exports.—Mineral whitestone (boracite), wheat, barley, oats, linseed, rye, sheep-wool, sheep-skins, salt fish, cattle, eggs, poultry, maize, cocoons, opium, granite stone, wines, olive oil, and mats for matting the ships.

Accommodation.—The entrance of the bay is divided into two long channels by Mola Islets. The northern entrance is about $1\frac{1}{4}$ miles, free from rocks; while the ships entering by the southern channel must avoid the Argri Petra Rock, south of Maxa Islet by 1 mile, and keep rather to the mainland. These islands are generally surrounded by rocks; there are no lights showing the positions, and ships coming on a dark night must wait till daybreak to enter the bay. The anchorage at Panderma is very good, and ships may safely lay in 7 to 9 fathoms of water, with 45 fathoms of chain out. N.E. are the prevailing winds, and blowing directly in the bay as they do, raise high seas, so that captains should take advantage of good weather to load their ships. From 300 to 400 tons can be loaded in a day; working by night is not allowed. Cargo is brought alongside in small boats of 7 to 12 tons each; grain is brought in bags and heaved up by winches; mineral whitestone (boracite) is brought in bulk, shovelled in barrels or baskets supplied by the steamers, and heaved up by winches.

Vessels must send their papers to Constantinople and get there the firman to pass the Dardanelles.

There is frequent steam communication with Constantinople, and telegraph office with direct communication with Europe.

There is a breakwater here, 200 metres in length, which would afford shelter in very rough weather from the northerly winds, which at times are very violent on this coast.

Pilotage.—Not necessary.

Port Charges.—**Boat Hire**:—5s. per day. **Labourage**:—2s. to 3s. 6d. per day. **Provisions**:—Beef, 4d., mutton, 5d. per lb.; fowls, 12s. per dozen; geese, 24s. per dozen; eggs, from 3s. to 6s. per 100; vegetables, cheap.

Pro Forma Charges on a steamer loading 700 tons of grain in three days:—

	£	s.	d.
Stevedoring 700 tons at 5d. per ton	14	11	8
Gratuities to sanitary and port officers	0	7	0
Boat hire, 3 days at 5s. per day	0	15	0
Telegrams and letters	0	6	0
Consular fee	0	2	6
Agency fee	2	0	0
	<hr/>		
	£18	2	2

PLATANA.

Platana, in lat. $41^{\circ}2'$ N., long. $39^{\circ}34'$ E., is an open roadstead about 7 miles west of Trebizonde.

Population.—5,000.

Imports.—Same as **Trebizonde**.

Exports.—Tobacco, beans, olives, and olive oil.

Accommodation.—The anchorage is in 10 to 15 fathoms about half a mile off shore, and is a good winter resort for vessels trading with

Turkey in Asia—Platana (*continued*).

Trebizonde. Vessels moor with open hawse towards the shore. The water shoals gradually to 5 fathoms over sand and mud at $1\frac{1}{2}$ cable lengths from the shore.

Port Charges.—Same as **Trebizonde**.

PORT EGRYLAR.

Port Egrylar is in lat. $38^{\circ}12'$ N., long. $26^{\circ}22'$ E.

Exports.—Raisins and madder root.

Accommodation.—The bay is well protected, the only winds to which it is exposed being those from S. by W. westward to S.W. $\frac{1}{2}$ S. There is a small pier for landing goods, with 3 ft. of water alongside. The anchorage is in 6 to 8 fathoms, mud bottom, about 4 cable lengths from the pier. Vessels seldom get full cargoes here.

Port Charges.—Vessels having paid port dues at Smyrna pay none here. Endorsement of bill of health, 30 piastres; labour, 20 piastres per day; discharging ballast, 1s. per ton.

Latzata, the town of which Egrylar is the port, is about $1\frac{1}{2}$ miles inland.

PORT GALLIPOLI.

Port Gallipoli, in lat. $37^{\circ}2'$ N., long. $28^{\circ}16'$ E., is situated in the Gulf of Kos. It affords accommodation for vessels of any draught. Anchorage is in 11 fathoms of water about a quarter of a mile off the shore, where there is shelter from all winds.

PORT HIERA.

Port Hiera, or Iero, in lat. $39^{\circ}0'$ N., long. $26^{\circ}35'$ E., is on the S.E. coast, and is the principal harbour on Mitylene Island.

Imports.—Grey cloth, twist, iron, rice, etc.

Exports.—Olive oil, pine, timber, silk, grapes, figs, cotton, soap, valonea, skins, and pitch.

Accommodation.—The entrance to the port is through a narrow channel about 4 miles long in a N.N.W. and S.S.E. direction. In some parts this channel is not more than 1 cable broad. Once inside, vessels are quite safe, as they are completely landlocked. The depth of water is 8 to 10 fathoms, mud bottom, but the harbour is only suitable for vessels of 11 ft. draught.

Caution:—Vessels cannot enter or leave Port Hiera at night or in thick weather with safety. It would also be hazardous for vessels of heavy draught to attempt to enter the port in a southerly gale.

Pilotage.—Pilots can be had if required, but with a chart of the island a small vessel can easily be taken in without any assistance.

Port Charges.—See **Mitylene**. **Provisions:**—Provisions generally are dear. Good beef can be obtained at the town of Mitylene at moderate rates.

RHODES.

Rhodes Island lies in lat. $36^{\circ}10'$ N., long. 28° E.

Population.—30,000.

Turkey in Asia—Rhodes (*continued*).

Imports.—Manufactured goods, calicoes, fruits, woollens, flour, tobacco, rice, coffee, etc.

Exports.—Fresh and dried fruits, vegetables, sponges, olive oil, wine, spirits, hides, leather, wax, honey, and valonea.

Accommodation.—The island possesses two harbours, (1) the Liman, with 25 to 27 ft. of water at the entrance, shoaling gradually inwards, and (2) Mandraki harbour, with 10 ft. of water at the entrance, and in which vessels are well sheltered from westerly winds, which prevail during the summer. The outer roadstead is the usual anchorage for large vessels, the best being found just opposite the three mills on the jetty uniting Fort St. Elms (on which the revolving light is placed), to the city wall. The bottom being sandy offers a good holding. Vessels entering the Liman or Great Harbour (which is exposed to winds blowing from directions between N. and S.E.), usually drop two anchors in the middle, and moor with two hawsers from the stern to the mole of Fort St. Angelo on the E. Wooden vessels only can be repaired. Ships load and unload with the help of lighters.

Pilotage.—There are no fixed pilotage charges, but vessels usually pay about £2 for entering and clearing.

Port Charges.—Light Dues :—18 paras (nearly equal to 1*d.*) per reg. ton, payable only when a vessel receives or lands passengers or cargo.

Health Office :—20 paras per reg. ton. Rhodes is a quarantine station for sailing vessels. Steamers are also allowed to perform quarantine, provided it is not for a longer period than 24 hours. **Labourers :—**2*s.* per day. **Ballast :—**1*s.* per ton. **Water :—**6*d.* per cask of 80 gallons. **Provisions :—**Beef, about 4*d.* per lb. Vegetables, cheap as a rule. **Manifests :—**Two copies are required for the Custom House, each of which must bear a stamp of the value of 3 piastres.

RIZEH.

Rizeh, or Rizo, is in lat. 41°3' N., long. 40°30' E. The anchorage is in 8 fathoms, about half a mile from the shore.

SAIDA, OR SIDON.

Saida, the ancient Sidon, is in lat. 33°42' N., long. 35°22' E.

Population.—20,000.

Imports.—Textiles, ironmongery, glassware, liquors, timber, coffee, sugar, rice, salt, and petroleum.

Exports.—Cereals, oranges, lemons, oil, olives, cocoons, figs, tobacco, skins, etc.

Accommodation.—The port is small, and almost blocked up by sandbanks. The anchorage is in 7 fathoms, sandy bottom, about a mile from the town. It is dangerous, as the ground is foul, and N.W. winds would soon drive vessels on the rocks.

Pilotage.—Optional. If taken, the usual fee for a steamer is £1 for the double service in and out.

Port Charges.—Light Dues :—For the first 800 reg. tons, 18 paras per reg. ton, and for every ton over 800 reg. tons, 9 paras per reg. ton. **Sanitary Dues :—**Up to 500 reg. tons, 20 paras per reg. ton; for every reg. ton over 500 up to 1,000, 12 paras; and every reg. ton over 1,000, 8 paras.

Turkey in Asia—Saida, or Sidon (continued).

Boat Hire :—The first day, 8s. ; following days, 5s. **Ballast** :—1s. per ton. **Labour** :—Foreman, 5s. ; labourers, 2s. 6d. per day. **Consular Fees** :—If a vessel is returning to a British port, 10s. for bill of health. **Brokerage** :—5 per cent. on the freight taken, plus £2. **Agency Fees** :—If discharging only, £2 for the first day ; 10s. each day following.

SALIF.

Salif, in lat. 15°20' N., long. 42°30' E., is on the Arabian coast of the Red Sea, some 45 miles N. of Hodeida, and lies immediately opposite the E. side of Kamaran Island.

Export.—Salt.

Accommodation.—Salif has no harbour, but is protected by the tongue of land known as “Ras Issa,” and there is sufficient depth of water to accommodate vessels of any size. There is a jetty 1,000 ft. long, the latter 200 ft. being built of iron, terminating in a T-head, in a depth of 28 ft. at low tide. Two lines of rails run the entire length of the jetty. Buoys have been laid down in from 9 to 15 fathoms to enable vessels to approach to within a very short distance of the pier head. The average rate of loading is from 500 to 600 tons per day.

Port Charges.—Vessels must first proceed to Kamaran to obtain pratique. **Stevedores** :—Loading salt, 4½d. per ton. If the vessel is quarantined, 5½d. per ton. Steam winches and winchmen supplied by the ship. The only other charge at this port is sanitary dues, which amounted to £8 4s. on a vessel of 2,710 tons net reg.

The total disbursement charges on a steamer of 3,000 tons net reg. amounted to £142 16s. 6d. The only money accepted in settlement of ship's disbursements is Turkish currency, English gold, or French napoleons. Maria Theresa dollars are not accepted.

SAMSOUN.

Samsoun, or Samsun, is in lat. 41°17' N., long. 36°20' E.

Population.—26,000.

Imports.—Cotton, woollen, and colonial goods, metals, and hardware.

Exports.—Cereals, tobacco, opium, flour, skins, wax, etc.

Accommodation.—The anchorage in summer is opposite the town, ½ mile from the shore, in 4 fathoms, with a mud bottom ; during the winter it is 1 mile from the shore in 6½ fathoms. The anchorage here is only good during the summer, as the N. and N.E. winds which prevail during the winter make it not only dangerous, but set up a heavy swell which makes it difficult for shipping or landing goods. Samsoun, being one of the principal commercial places on the coast, is in communication with all large cities. There are two cranes on the landing-place to lift 1 and 3 tons respectively.

Port Charges.—**Light Dues** :—20 paras per reg. ton up to 800 reg. tons, 10 paras per reg. ton for each reg. ton above 800 ; regular service steamers are granted a reduction of 15 per cent. Vessels coming from Constantinople generally pay their light dues there in advance. Vessels obliged to put into port for any cause are exempt from the payment of light dues. **Sanitary Dues** :—20 paras per reg. ton up to 500 reg. tons, 12 paras

Turkey in Asia—Samsoun (continued).

per reg. ton for each reg. ton above 500 up to 1,000, and 8 paras per reg. ton for each reg. ton over 1,000. **Bill of Health** :—Vessels departing for foreign ports should obtain a certificate from their consuls; the charge varies. **Stevedore** :—Cargo is discharged by lighters, paid for by the receiver, and loaded by lighters, paid for by the shippers. Vessels thus have no expenses either for loading or discharging except the pay of labourers hired on board to assist the sailors in unloading and stowing. Labourers, 7d. to 1s. per day. **Commission** :—5 per cent. on freight.

SCALA NUOVA.

Scala Nuova is in lat. $37^{\circ}52' N.$, long. $27^{\circ}19' E.$

Population.—10,000.

Exports.—Tobacco, figs, raisins, wine, sweetmeats, oil, etc.

Accommodation.—The harbour is exposed to strong winds, and is rendered unsafe when N. and N.E. winds are high. The outer anchorage is in 9 to 12 fathoms about $\frac{1}{2}$ mile from the town, but shoals gradually to 6 ft. at the piers.

Port Charges.—**Light Dues** :—0.45 piastres per reg. ton. **Sanitary Dues** :—0.50 piastres per reg. ton. **Labour** :—10 piastres per day.

SHEIKH SYED.

Sheikh Syed, in lat. $12^{\circ}48' N.$, long. $43^{\circ}28' E.$, is almost opposite Perim Island. It is sometimes written Cheik Said and was formerly a French settlement, but is of no importance.

Accommodation.—No vessel drawing more than 12 ft. can go into the lake. Large ships anchor in the roadstead, in 4 to 5 fathoms about $\frac{1}{2}$ a mile off, where they are quite exposed. It is next to impossible for sailing vessels to beat back if once driven past the anchorage. Brackish water is obtainable about 5 miles from the beach. Ballast is difficult to get, as there are no lighters, and landing is not easy.

SIDON.

(See **Saida**, p. 1531.)

SINOPE.

Sinope is in lat. $42^{\circ}1' N.$, long. $35^{\circ}9' E.$

Population.—11,000.

Imports.—Colonial produce, manufactured goods, flour, coal, etc.

Exports.—Timber, rice, salt, cordage, fish, oil, leeches, etc.

Accommodation.—The port is well protected, and there is good anchorage in 6 to 7 fathoms about one-third of a mile off shore.

Port Charges.—**Sanitary Dues**, see **Turkey**.

SMYRNA.

Smyrna, in lat. $38^{\circ}24' N.$, long. $27^{\circ}10' E.$, is situated at the head of the gulf of the same name. Distance by sea from Liverpool, 2,870 miles. It is the principal port in the Levant.

Population.—201,000.

Imports.—Manufactured goods, timber, coal, petroleum, iron, tin, steel, copper, colonial products, spirits, salt fish, etc.

Turkey in Asia—Smyrna (*continued*).

Exports.—Dried fruits, valonea, cereals, seeds, liquorice root and paste, carpets, cotton and cotton-seed, wool, sponges, opium, tobacco, olive oil, skins, emery stone, etc.

Accommodation.—It is a good natural harbour, being surrounded by mountains, with deep water to within a short distance of the shore. The entrance to the harbour narrows to about $\frac{1}{2}$ mile, the channel being well marked out and lighted. The anchorage is good and protected from every wind.

The roadstead lies on the E. side of the harbour, but, as a rule, steamers enter the breakwater, which is capable of affording berths to some 25 steamers, and moor stern on to the quays for the purpose of discharging and loading, which is done by lighters and pontoons, having a carrying capacity of from 10 to 120 tons. Large vessels anchor at a distance and are safely loaded and discharged in the same way.

There is about 24 ft. of water inside the breakwater, and about 20 ft. alongside the quays. No extra charge is made for entering. The entrance is on the N. side. Masters must obtain pratique before entering the breakwater, and at the same time the berth will be pointed out by the captain of the port.

The quays extend from one end of the town to the other (N. to S.), and vessels are permitted to load and discharge alongside. There is also the Ottoman Aidin railway pier, which is built of steel and has about 1,400 ft. of berths; draught 22 to 28 ft. at low water. The head is turned in the direction of the strongest winds, and vessels remain alongside. There are strong bollard mooring and warping buoys; four 55-cwt. movable steam cranes, 35 ft. radius; and one 25-ton, small radius, hand crane. There is a fixed and movable crane to lift from 10 to 30 tons on the Cassaba railway pier, but it is only available for small native craft, the water being shallow. There is a crane on the Custom House to lift from 5 to 10 tons. There are three slips with a lifting power of from 70 to 100 tons, and one slip with a lifting power of 500 tons.

Pilotage.—Not compulsory. There are no regular pilots at this port; they are generally engaged by masters after entering the gulf. **Gulf Pilotage:**—In and out, £4. **Harbour Pilotage:**—Mooring and unmooring, £2.

Port Charges.—**Bill of Health:**—10s. Vessels clearing from abroad for a Turkish port are required to be furnished with a Turkish bill of health. **Hospital Dues:**—1½d. per ton reg. **Sanitary Dues:**—Steamers of 500 tons reg. pay 20 paras per reg. ton; for every reg. ton above 500 up to 1,000 the dues are reduced to 12 paras, and to 8 paras from 1,000 reg. tons upwards. **Labour:**—10d. per ton for discharging, and 10d. per ton for loading any description of cargo except iron, which costs 1s. per ton. In loading and discharging, all expenses except lighterage are on the ship. Steamers discharging coal allow 2 per cent. for not weighing. **Light Dues:**—30 paras per reg. ton up to 800 reg. tons, and 15 paras for every reg. ton above 800, with 10 per cent. discount. **Anchorage:**—1s. 1d. **Ballast:**—Sand, 3s. per ton. **Brokerage:**—£5 5s. **Agency Commission:**—3 per cent.; brokerage for procuring freight, 3 per cent.; chartering brokerage, 5 per cent.; address commission, 2½ per cent. **Endorsing Articles:**—2s. 6d. **Provisions:**—Abundant. Beef, 1s. per oke of 2·8 lb. **Water:**—2s. per ton.

Pro Forma Charges on a steamer of 1,500 tons reg., arriving in ballast, and loading general cargo for the United Kingdom:—

Turkey in Asia—Smyrna (*continued*).

	£	s.	d.
To British Consulate: Hospital dues	7	16	3
" " Endorsing articles	0	2	6
" " Bill of health	0	10	0
Sanitary dues, 500 piastres, exchange at 117	4	5	6
Light dues, 776 piastres, exchange at 117	6	12	8
Anchorage	0	1	1
Gulf pilotage	4	0	0
Harbour pilotage	2	0	0
Boat hire, 10 days at 4s.	2	0	0
Stevedore, 3,500 tons at 10d. per ton	145	16	8
Agency commission, about £1,750 at 3 per cent.	52	10	0
Brokerage, about £1,750 at 3 per cent.	52	10	0
	£278	4	8

N.B.—Steamers arriving with coal and at the same time loading homewards pay Consular and other port charges once only.

Pro Forma Charges on a steamer of 1,500 tons reg., discharging a cargo of coal in Smyrna :—

	£	s.	d.
British Consulate: Hospital dues	7	16	3
" " Endorsing articles	0	2	6
Sanitary dues, 500 piastres, exchange at 117	4	5	6
Light dues, 776 piastres, exchange at 117	6	12	8
Anchorage	0	1	1
Custom House gratuity	0	18	0
Gulf pilotage (not compulsory)	4	0	0
Harbour pilotage	2	0	0
Boat-hire, 8 days at 4s.	1	12	0
Stevedore, about 3,000 tons at 10d. per ton	125	0	0
Doing ship's business	5	5	0
	£157	13	0

SYMI.

Symi is in lat. 36°36' N., long. 27°52' E.

Population.—18,000.

Imports.—General merchandise.

Export.—Sponges.

Accommodation.—The port is deep, long, and comparatively narrow, ranging from 16 ft. to 150 ft. wide. There is a well-built quay.

Pilotage.—Unnecessary.

Port Charges.—No charges are made for mooring. **Labour :—** 3 to 5 fr. per day. **Brokerage :—** By agreement. The only other charges are the regular sanitary fees and any optional sum which may be given to assist the "Demogerontic" of the island, for the maintenance of religious establishments, for the payment of doctors employed by the municipality, and for medicine given to the inhabitants free of charge.

TENEDOS.

Tenedos Island, in lat. 39°48' N., long. 26°3' E., is 15 miles S.S.W. of the entrance to the Dardanelles.

Population.—5,000.

Export.—Wine.

Accommodation.—The port, which is on the N.E. side of the island, is very small, and is protected by a pier. There is good anchorage in 2½ to 4 fathoms, about ¼ mile off, with a sandy and weedy bottom. It is a safe resort for vessels prevented by head winds from passing through the Dardanelles.

Turkey in Asia.

TREBIZONDE.

Trebizonde is in lat. $41^{\circ}0'$ N., long. $39^{\circ}42'$ E.

Population.—35,000.

Imports.—Cotton and woollen stuffs, twist, iron, hardware, tin and tin plates, sugar, tea, coffee, spirits, rice, spice, etc.

Exports.—Nuts, tobacco, shawls, beans, galls, cereals, butter, skins, porpoise oil, gum, wool, sheep, eggs, fruit, etc.

Accommodation.—There is good anchorage in 4 to 6 fathoms on a sandy and clay bottom. It is exposed to N.W. gales, which at times are dangerous. Ships moor with open hawse to the N. and a good hawser and stream anchor on shore as a sternfast. A quay for the loading and discharging of steamers is in course of construction. In time of storms vessels resort to Platana, which is about 7 miles W. of Trebizonde. Shipmasters must, on arrival, exhibit bills of health at the health office, and, if found clean, are immediately given pratique. After receiving pratique discharging can at once begin. Lighters are provided by the consignees at their own expense. Each lighter carries 10 to 15 tons. There are two cranes at the landing place to lift $1\frac{1}{2}$ and 2 tons respectively.

Port Charges.—**Health Office Fee** :—20 paras per net reg. ton up to 500 reg. tons. 12 paras per reg. ton above 500 and up to 1,000 reg. tons, and 8 paras for each reg. ton above 1,000 reg. tons. **Light Fees** :—20 paras per net reg. ton if below 800 reg. tons, 10 paras per reg. ton above 800 reg. tons.

Ballast :—Shingle and sand free if taken by ship's boats; but can be put alongside at about 9s. per lighter of 6 or 7 tons. **Water** :—Water is generally obtained from native boats at 10d. per barrel. **Labour** :—1s. 8d. per day.

Provisions :—Abundant and moderate in price; bread, 3d.; beef, 1s. 2d.; mutton, 1s. 4d.; vegetables, 4d. to 7d. per oke of $2\frac{3}{4}$ lb. **Harbour-master** :—Piloting vessels to anchorage, 4s.

TRIPOLI (Syria).

Tripoli is in lat. $34^{\circ}27'$ N., long. $35^{\circ}50'$ E.

Population.—36,000.

Imports.—Manchester goods, hardware, rice, hides, salt, marble, coffee, sugar, petroleum, lumber, tiles, briquette coal, woollens, and leather.

Exports.—Grain, silk, wool, soap, oranges, lemons, liquorice root, olive oil, albumen, eggs, dari seed, barley, and cummin.

Accommodation.—The anchorage is in 3 to 7 fathoms on a sandy bottom, but during strong winds from N. to N.E. it is difficult to load vessels; and on such occasions steamers go to the south harbour to load. The depth at the entrance of the port is 23 to 25 ft. The depth in the port is 23 to 25 ft., and at the quayside 4 to 6 ft. There are two small cranes on the Custom House quay, and another at the Government landing place. In case of necessity a steamer's bunkers could be supplied with briquette coal up to 100 tons. Provisions and labour are both to be had at reasonable prices.

Port Charges.—**Sanitary Dues** :—20 paras per reg. ton up to 500 reg. tons, 12 paras for each reg. ton above 500 reg. tons and up to 1,000 reg. tons; 8 paras for each reg. ton above 1,000 reg. tons. **Light Dues** :—20 paras per reg. ton up to 800 reg. tons; 10 paras for each reg. ton above 800 reg. tons. A discount of 10 per cent. is allowed off all light dues.

Turkey in Asia—Tripoli (Syria) (continued).

Pro Forma Charges on a steamer of 2,000 tons net reg., loading full cargo of barley, in port 10 days :—

	£	s.	d.
Sanitary dues	5	9	1
Lighthouse dues	5	14	6
Gratuity to sanitary, light, and quay officers	0	12	0
Stevedoring on 2,000 tons barley (6d. per ton)	50	0	0
Boat hire for seven days	2	0	0
Agency's fee and clearing ship's papers	5	0	0
	£68	15	7

Pro Forma Charges on a steamer of 2,900 tons reg., discharging 300 tons of Rangoon rice, with quick dispatch of half day only :—

	£	s.	d.
Sanitary dues	7	0	2
Lighthouse dues	7	11	4
Custom House expenses, stamps, and manifest	1	5	0
Two clerks for tallying on shore	0	10	0
Boat hire attending ship labourers	0	10	0
Stevedore, discharging 300 tons (4d. per ton)	5	0	0
Agency fee, clearing papers, collecting freight	4	0	0
Gratuity to sanitary, light, and quay officers	0	10	0
	£26	6	6

TYRE.

Tyre is in lat. 34°25' N., long. 35°2' E.

Population.—6,000.

Imports.—Sugar, rice, petroleum, manufactured goods, etc.

Exports.—Grain, figs, oil, tobacco, silk, etc.

Accommodation.—The anchorage is in from 8 to 12 fathoms, low water being about 20 in. less.

Pilotage.—Optional. If taken, £1 per vessel, in and out.

Port Charges.—**Light Dues** :—For the first 800 reg. tons, 18 paras per reg. ton ; for every reg. ton above 800, 9 paras. **Sanitary Dues** :—Up to 500 reg. tons, 20 paras per reg. ton ; above 500 and up to 1,000 reg. tons, 12 paras per reg. ton ; for every reg. ton above 1,000, 8 paras.

Ballast.—1s. per ton. **Labour** :—2s. 6d. per day. **Boat Hire** :—8s. per day. **Brokerage** :—5 per cent. on the freight, plus £3 agency fee. When discharging only, £2 for the first day, and 15s. for each following day.

VOURLAH.

Vourlah Skala is in lat. 38°21' N., long. 26°47' E.

Population.—Port and town about 25,000.

Accommodation.—The anchorage, in front of the Custom House, is in 6 to 7 fathoms, 3 cable lengths from the shore. About a mile to the north there is good anchorage in 14 fathoms. The town of Vourlah is 2½ miles inland. Provisions and fresh water can be obtained.

YAFFA.

(See **Jaffa**, p. 1524.)

*Turkey in Asia.***YANBO.**

Yanbo, or Yembo, is in lat. $24^{\circ}10'$ N., long. $37^{\circ}50'$ E. It is of small importance except during the pilgrim season, when all northern pilgrims embark here on their return home.

Export.—Dates.

Accommodation.—There is 4 to 6 fathoms inside the harbour.
Water :—Good fresh water can be had, a condenser having been recently established. **Provisions :**—Sheep, bullocks, and fowls can be obtained, but are scarce and dear during the return pilgrim season.

Part V.

AUSTRALASIA.

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AUSTRALIA.

The Commonwealth of Australia consists of the six original States—New South Wales, Queensland, South Australia and northern territory, Tasmania, Victoria, and Western Australia. It has a total area of 2,974,580 square miles, with a population estimated at 4,200,000.

Commerce.—The total trade of the Commonwealth is of an annual value of over 125,000,000 pounds sterling; imports, £51,898,380; exports, £72,903,647. The import values represent the amount on which Customs duties are levied or upon which they would be levied if the duties were based solely on an *ad valorem* standard, this basis being arrived at by the addition of 10 per cent. on the market value in the country of origin. The value of goods exported is the value in the principal markets of the Commonwealth in the usual and ordinary commercial acceptance of the term. The products of the Commonwealth consist principally of wool, gold specie and bullion, butter, copper and copper ore, skins, hides, tin, flour, frozen mutton, and beef. The imports comprise wheat, wearing apparel, cotton, wool and linen goods, hardware, timber, and machinery. Exclusive of the inter-state trade, the shipping entered and cleared at the Australian ports amounts (according to the latest returns available) to about 9,000,000 reg. tons, the figures for 1907 showing 4,394 vessels entered and cleared, with a total tonnage of 8,822,866.

Mercantile Marine.—The commercial navy of the Commonwealth on December 31, 1906, consisted of 2,726 vessels, with a total tonnage of 367,030 tons, made up of 1,644 sailing ships of 128,288 tons, and 1,082 steamers of 238,742 tons.

Internal Communications.—There are at the present time over 15,000 miles of Government and private railways open for public traffic, together with an excellently organized post and telegraph system. The gauge of the railways is different in the various States.

Currency, Weights and Measures.—The currency, weights and measures employed in the Commonwealth are the same as those used throughout the United Kingdom, with the exception that in certain districts the short ton of 2,000 lb. is employed.

Regulations for Stowage and Dunnage of Cargoes.—To be observed by all vessels loading for over-sea voyages, adopted by the Underwriters' Associations of Australia and New Zealand.

STEAMERS.

(1) Before any cargo or ballast is taken in by steamers commencing their loading at a port in Australasia, the limbers must be cleaned out, and submitted for inspection to the Association's surveyor; the limbers must be kept clear of ballast, and nothing whatever may be stowed therein.

(2) **Ballast.**—If sand ballast, or cargo of a like nature, is taken, the ceiling must be caulked or lathed to the satisfaction of the Association's surveyor, but sand is not allowable when loading wool cargo.

(3) **Wool and General Cargoes.**—Steamers with ballast tanks to have not less than 2 in. dunnage on the ceiling, continued up over the turn of the

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bilge on the tank tops. This dunnage may, however, on the authority of the Association's surveyor, be dispensed with in those cases where the tank tops are of heavy plates, and the ceiling or platform is of a character suitable for the cargo to be carried.

(4) Steamers without ballast tanks to have not less than 6 in. dunnage on the floor, and not less than 9 in. in the bilge.

(5) On laid 'tween decks not less than 2 in. dunnage for bales or bags, and not less than 1 in. for cases and other wooden packages; also not less than 1 in. vertical side dunnage. The fore and aft battens are not to be reckoned as dunnage.

(6) To prevent contact, not less than 3 in. dunnage will be required between wool, skins, and tallow, oil, etc., or any two kinds of cargo likely to damage each other. Iron stanchions to be covered with canvas and mats when so required by the surveyor.

(7) Moist goods and liquids, such as salted hides, tallow, molasses, oil, wine, etc., are not to be stowed too near dry goods whose nature it is to absorb moisture.

(8) Tallow in hogsheads must not be stowed over six heights; molasses, oil, or wine, in puncheons or hogsheads, not over four heights, properly bedded and quoined.

(9) **Grain Cargoes.**—All grain, flour, etc., to be subject to dunnage regulations and exemption, as per Clause 3, whether part or full cargo, and to have 2 in. shifting boards well secured in the 'tween-deck decks from deck to deck, and in the lower hold to 6 ft. down below the beams; bulkheads when required by the surveyor, and ventilators where necessary, etc.; on no consideration must the stanchions under the beams be removed. Burlap or sails to be laid over dunnage in floor and bilges. No cargo to be taken in until the Association's surveyor has inspected the limbers and the dunnage in floors and bilges, and the burlap or sails thereon have been passed by him.

(10) All grain must be shipped in bags. The bags must not be cut, or the grain started in stowing or loading cargo; they must be so filled as to allow of their being properly handled without the use of hooks.

(11) The use of hooks is absolutely prohibited.

(12) **Copra.**—Steamers loading part cargoes of copra must have the copra separated from the other cargo by a wooden bulkhead not less than 2 in. thick, fixed to the satisfaction of the surveyor. If copra be shipped in bags it must be carried in the 'tween decks only. The ventilation in all steamers loading this cargo must be approved by the surveyor.

(13) **Metals, etc.** :—All steamers carrying part cargoes of metals, ore, concentrates, slimes, tailings ^{and} other articles of a like nature, must have stowed at the bottom of the hold such quantity as the Association's surveyor may approve; the balance of shipment must be spread in such manner as to minimize the pressure on other cargo.

(14) Steamers carrying full cargoes of metals, ores, etc., as above to be limited in loading to the winter North Atlantic Scale of Freeboard, and to be subject to the special stowage and loading conditions applicable to same.

(15) **Tow.**—Tow must be covered in hessian, bagging, or similar material, as protection against risk of fire by sparks, smoking, etc.

(16) **Coal on Deck.**—No steamer will be allowed to carry any coal on deck unless her bunkers shall first have been filled with coal.

(17) The quantity of coal (subject to Clause 16) that may be carried on the

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deck of any steamer shall be determined in each case by the Association's surveyor, and shall be such as will not, in his opinion, affect her stability or reduce her freeboard below the amount that may be assigned to her by the "Load Line Act, 1890," or the Association's rules.

(18) All coal carried on deck shall be stowed in such a manner and in such places as are to the satisfaction of the Association's surveyor.

(19) **Coal Bunkers.**—No cargo shall be carried in the permanent coal bunkers.

(20) **Deck Cargo.**—The deck dunnage to be not less than 6 × 4 in. square scantlings athwart ships, covered with not less than 1 in. boards fore and aft. All deck cargo must be covered with strong canvas, properly secured with wire or chain lashings at the sides, and set up in the centre on top with rope; such coverings and lashings to be approved by the Association's surveyor. The quantity and description of cargo permitted on deck to be determined by the Association's surveyor.

(21) **Live Stock.**—The above regulations do not apply to live stock, or fittings for same.

(22) **Docking.**—Steamers may be docked after commencing to load, provided the whole weight of cargo and bunker coal on board does not exceed two-thirds of her actual weight-carrying capacity; but the taking on board of additional cargo while in dock will not be allowed in any case. It is, however, recommended that the vessel be docked with only the necessary dead weight aboard.

(23) **Freeboard.**—To be measured at lowest part of sheer when in sailing trim. Steamers having a freeboard assigned to them under the "Load Line Act, 1890," or similar local acts, will be allowed to load down to that limit. Those not so marked will be assigned a freeboard by the Association, which will be calculated from the tables adopted in the "Load Line Act, 1890."

SAILING VESSELS.

(1) Before any cargo or ballast is taken in, the limbers must be cleaned out and submitted for inspection to the Association's surveyor. The limbers must be kept clear of ballast, and nothing whatever may be stowed herein.

(2) **Ballast.**—All ballast must be approved by the Association's surveyor before being shipped.

(3) **Iron Vessels.**—Sand ballast alone is absolutely prohibited, but sand may be used for the purpose of filling in between the stone ballast, so as to level it up; in such case dunnage must be laid over the ballast, and the ceiling caulked to the satisfaction of the surveyor; but for wool cargoes no sand shall be used.

(4) **Wooden Vessels.**—Sand ballast will not be allowed under any circumstances.

(5) **Manganese.**—Taken as ballast must have special and extra dunnage, and must be packed in bags, if so required by the surveyor.

(6) **Recommendation.**—Wooden vessels with stringers or clamps on old beams should have openings cut through the ceiling to allow any leakage from above to escape. It is presumed that all caulked 'tween decks are fitted with the necessary scuppers in the sides.

(7) **Wool and General Cargoes:**—Hemp, flax, wool, leather, pelts, hides, skins, bark (in bales or bags), etc., and all case goods to have dunnage.

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(8) Wood ships, in floor, not less than 9 in. in bilges, not less than 12 to 14 in. to be laid athwart ship next the skin. Side dunnage, up the side to lower hold beams not less than 4 in., and to the upper deck, if there be more than one, not less than $2\frac{1}{2}$ in. vertical.

(9) Iron ships, not less than 6 in. in the floor, and not less than 9 in. in the bilges, half the above side dunnage, whether permanent or not.

(10) On laid 'tween decks not less than 2 in. dunnage for bales or bags, and not less than 1 in. for cases or casks, laid athwart ship.

(11) All stringers, clamps, hooks, pointers, masts, bitts, etc., not less than 2 in. dunnage for bales or bags, and not less than 1 in. for cases or casks.

(12) The fore-and-aft battens in iron ships will not be taken as dunnage.

(13) To prevent contact, not less than 3 in. dunnage will be required between wool, skins, and tallow oil, etc., or any two kinds of cargo likely to damage each other. Iron stanchions to be covered with canvas or mats when so required by the surveyor.

(14) Moist goods and liquids, such as salted hides, tallow, molasses, oil, wine, etc., are not to be stowed too near dry goods whose nature it is to absorb moisture.

(15) Tallow in hogsheads must not be stowed over six heights; molasses, oil, or wine, in puncheons or hogsheads, not over four heights, properly bedded and quoined.

(16) It is recommended that vessels chartered to load tea, rice, coffee, sugar, etc., should have not less than 9 in. dunnage in the floor, and 12 in. in the bilges. Side dunnage as above.

(17) **Grain Cargoes.**—All grain, flour, etc., to have dunnage as above, whether part or full cargo, and to have double shifting boards of not less than 2 in. thickness, deals or planks placed abreast of each other, and securely lashed to each stanchion, and not more than 6 in. apart; said boards to extend from foremast to mizzenmast, or, in case of a four-masted vessel to jiggermast, in the 'tween decks from deck to deck, and in the lower hold to 6 ft. from below the beams; bulkheads when required by the surveyor, and ventilators where necessary, etc.; on no consideration must the stanchions under the beams be removed. Burlap or sails to be laid over the dunnage in floor and bilges. No cargo to be taken in until the Association's surveyor has inspected the limbers and the dunnage in floor and bilges, and the burlap or sails thereon have been passed by him.

(18) All grain must be shipped in bags. The bag must not be cut, or the grain started in stowing or loading cargo; they must be so filled as to allow of their being properly handled without the use of hooks.

(19) The use of hooks is absolutely prohibited.

(20) **Copra.**—Vessels loading part cargoes of copra must have the copra separated from the other cargo by a wooden bulkhead not less than 2 in. thick, fixed to the satisfaction of the surveyor. If copra be shipped in bags, it must be carried in the 'tween decks only. The ventilation in all vessels loading this cargo must be approved by the surveyor.

(21) **Coal Cargoes.**—Vessels over 700 tons reg. loading coal, require to have close shifting boards not less than 2 in. thick, to be put up from main deck down to 'tween decks, and should 'tween decks be laid, shifting boards for a depth of 4 ft. to be put up in lower hold from 'tween decks downwards.

(22) **Metals, etc.**—All vessels carrying part cargoes of metals, ores, concentrates, slimes, tailings, ^{and} or other articles of a like nature, must have

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stowed at the bottom of the hold such quantity as the Association's surveyor may approve ; the balance of shipment must be spread in such manner as to minimize the pressure on other cargo.

(23) Vessels carrying full cargoes of metals, ores, etc., as above, to be limited in loading to the winter North Atlantic Scale of Freeboard, and to be subject to the special stowage and loading conditions applicable to same.

(24) **Tow.**—Tow must be covered in hessian, bagging, or similar material, as protection against risk of fire by sparks, smoking, etc.

(25) **Docking.**—Vessels may be docked after commencing to load, provided the whole weight of cargo on board does not exceed two-thirds of her actual weight-carrying capacity ; but the taking on board of additional cargo while in dock will not be allowed in any case. It is, however, recommended that the vessel be docked with only the necessary deadweight aboard.

(26) **Freeboard.**—(To be measured at lowest part of sheer when in sailing trim). Vessels having a freeboard assigned to them under the "Load Line Act, 1890," or similar local acts, will be allowed to load down to that limit. Those not so marked will be assigned a freeboard by the Association, which will be calculated from the tables adopted in the "Load Line Act, 1890."

NOTE.—Applications to this Association for voyage or grain certificates must be made in writing before the vessel commences to load.

Emigration.—The transport of emigrants from ports in the Commonwealth is conducted under the provisions of the Passengers Act, the Imperial Merchant Shipping Act, and the Local Navigation Act of 1876.

Immigration.—The immigration into the Commonwealth of persons from over-sea ports is conducted under the provisions of the Emigration Restriction Act of 1901. In accordance with certain sections of this Act, persons described in any of the following paragraphs are prohibited from entering at any port :—

(a) Any person who when asked to do so by an officer fails to write out at dictation and sign in the presence of the officer a passage of fifty words in length in a European language directed by the officer ;

(b) Any person likely in the opinion of the Minister or of an officer to become a charge upon the public or upon any public or charitable institution ;

(c) Any idiot or insane person ;

(d) Any person suffering from an infectious or contagious disease of a loathsome or dangerous character ;

(e) Any person who has within 3 years been convicted of an offence, not being a mere political offence, and has been sentenced to imprisonment for 1 year or longer therefor, and has not received a pardon ;

(f) Any prostitute or person living on the prostitution of others ;

(g) Any persons under a contract or agreement to perform manual labour within the Commonwealth : Provided that this paragraph shall not apply to workmen exempted by the Minister for special skill required in Australia or to persons under contract or agreement to serve as part of the crew of a vessel engaged in the coasting trade in Australian waters if the rates of wages specified therein are not lower than the rates ruling in the Commonwealth.

But the following are excepted :—

(h) Any person possessed of a certificate of exemption in force for the time being in the form in the schedule, signed by the Minister or by any

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officer appointed under this Act, whether within or without the Commonwealth ;

(i) Members of the King's regular land or sea forces ;

(j) The master and crew of any public vessel of any Government ;

(k) The master and crew of any other vessel landing during the stay of the vessel in any port in the Commonwealth : Provided that the master shall, upon being so required by any officer, and before being permitted to clear out from or leave the port, muster the crew in the presence of an officer ; and if it is found that any person, who according to the vessel's articles was one of the crew when she arrived at the port, and who would in the opinion of the officer be a prohibited immigrant but for the exception contained in this paragraph, is not present, then such person shall not be excepted by this paragraph, and until the contrary is proved shall be deemed to be a prohibited immigrant and to have entered the Commonwealth contrary to this Act ;

(l) Any person duly accredited to the Government of the Commonwealth by the Imperial or any other Government, or sent by any Government on any special mission ;

(m) A wife accompanying her husband, if he is not a prohibited immigrant, and all children apparently under the age of eighteen years accompanying their father or mother if the father or mother is not a prohibited immigrant ; but so that the exceptions in this paragraph shall not apply if suspended by proclamation ; and such suspension may be of general application or limited to any cases or class of cases ;

(n) Any person who satisfies an officer that he has formerly been domiciled in the Commonwealth or in any colony which has become a State.

The master, owner, and charterers of any vessel from which any prohibited immigrant as above described, gains entry to the Commonwealth, are jointly and severally liable to a penalty not exceeding £100 for each prohibited immigrant. Powers are granted to the Federal Minister or to any collector of customs specially empowered by him, to detain any vessel from which a prohibited immigrant may have entered the Commonwealth, and, for the purposes of such detention, the authorities are entitled to issue a writ in the local courts of the Commonwealth. The detention shall, however, be for safe custody only, and will cease upon a bond being entered into with two sufficient sureties for the payment of any penalty which may be adjudged due.

Masters of vessels arriving at any port in the Commonwealth with passengers on board for that port, must, before making entry at the Customs, deliver to an officer a list of all such passengers, specifying to the best of his knowledge the name, nationality, the place of shipment, and the calling and occupation of each such passenger. He shall also, if required, deliver a list showing the number and names of the crew and their nationality, and produce the vessel's articles, and should he have amongst his crew persons not of European race or descent, he must produce for inspection a list showing the number and names of such persons and their nationality. A master guilty of any offence against this regulation is liable, upon summary conviction, to a penalty not exceeding £50, and in default of payment to imprisonment, with or without hard labour, for any period not exceeding 3 months.

NEW SOUTH WALES.

The State of New South Wales comprises all that portion of the continent lying between lats. 28° and $37^{\circ}30'$ S., and longs. 141° and 143° E. The frontage to the Pacific Ocean, including the inlets of Port Jackson, Botany Bay, Port Hunter (or Newcastle), Port Stephens, and Twofold Bay, is a little over 800 miles long, the entire area of the State being 310,372 square miles, with a population estimated at 1,568,950.

Harbour and Light Dues.—*4d.* per ton reg. for each period of 3 months, this payment to cover all the ports of the State. Vessels putting on to any port owing to stress of weather, to repair damages, for bunker coal, or if engaging in the whaling trade, are exempt from the payment of harbour and light dues.

Tonnage Dues.—The following tonnage dues are charged in respect of all public wharves at any port in the State, with the exception of Sydney : $\frac{1}{4}d.$ per ton reg. on fully laden vessels discharging the whole of their inward cargo, for every day or part of a day that such vessel occupies a berth ; $\frac{1}{2}d.$ per ton reg. on vessels discharging a portion only of their inward cargo, or on vessels only partly laden. These rates, however, are not leviable until after the expiration of free lay-days, as under :—

For vessels not exceeding 100 tons reg., 2 days.

“ “ exceeding 100 and not exceeding 200 tons reg., 4 days.

“ “ “ 200 “ “ 300 “ 6 “

“ “ “ 300 “ “ 400 “ 8 “

and for every additional 100 tons or fractional part of 100 tons, 1 day, excluding Sundays and public holidays in every case. A vessel requiring a berth for loading only will pay $\frac{1}{2}d.$ per ton per day for the first 25 days, after which $\frac{1}{4}d.$ per ton per day will be charged for such period during which she occupies a berth.

Sydney.—Tonnage Dues :—Vessels over 240 tons reg., $\frac{1}{2}d.$ per reg. ton per day up to 5,000 tons net reg., and $\frac{1}{4}d.$ per ton for each ton over 5,000 net reg. tons for the first 6 days, and half the above rates for each subsequent day.

Pilotage.—Ships in ballast, *1d.* per ton reg. ; if entering for the purpose of re-fitting or docking, and undertaking no commercial operations, *1d.* per ton inwards, and *2d.* per ton outwards. Other vessels, *2d.* per ton inwards and outwards. Vessels entering through stress of weather, for orders, repairs, provisions, or bunker coal, *1d.* per ton inwards and outwards. At the ports of Sydney and Newcastle the minimum charge is fixed at £2 10s. inwards or outwards, and at all other ports at £1 5s. ; the maximum amount payable is £20.

EDEN, OR BOYD TOWN.

Eden, or Boyd Town, in lat. $37^{\circ}5'$ S., long. $149^{\circ}59'$ E., is on Twofold Bay, 5 miles N. of Cape Howe.

Accommodation.—The anchorage in the cove, off the town, has depth of from 3 to 5 fathoms, about 3 cables from the shore. At the

New South Wales—Eden, or Boyd Town (*continued*).

end of the jetty there is 12 ft. at low water ; springs rise 5 to 7 ft. Water, coal, and provisions can be obtained here, and it is a good place for whalers to call at.

Pilotage.—There is a pilot establishment, and a pilot will come off on the usual signal.

GRAFTON.

Grafton is in lat. $29^{\circ}39'$ S., long. $152^{\circ}55'$ E., and is situated upon the Clarence River, 50 miles from the entrance.

Population.—6,714.

Imports.—General merchandise.

Exports.—Sugar, maize, farm produce, and hardwood timber.

Accommodation.—The port has a bar at the entrance at a distance of 3,300 ft. from the end of the breakwater. The bar carries from 15 ft. to 17 ft. at high water, and 11 ft. to 13 ft. at low water springs, according to amount of shoaling. There are public wharves at all towns on the Clarence River capable of berthing vessels drawing 14 ft. Grafton is connected with Richmond River by railway. There is a patent slipway here 185 ft. long with a lifting power of 200 tons. The cradle is 18 ft. wide.

Pilotage.—Compulsory. Steamers and sailing vessels, 1*d.* per reg. ton if in ballast, and 2*d.* per reg. ton when laden with cargo. **Towage** :—4*d.* per reg. ton either way over the bar to anchorage. River towage according to agreement.

Port Charges.—**Mooring** :—Removal fees, £1 for vessels of 300 tons ; £1 5*s.* up to 400 tons ; £1 10*s.* up to 500 tons ; and £1 15*s.* for vessels up to 600 tons. **Light Dues** :—4*d.* per reg. ton, payable half-yearly.

NEWCASTLE.

Newcastle Harbour, formerly Port Hunter, is in lat. $32^{\circ}53'$ S., long $151^{\circ}48'$ E.

Population.—Including suburbs, 55,000.

Exports.—Coal, wool, and frozen meat.

Accommodation.—Vessels drawing 24 ft. 6 in. can safely enter a high water when the bar is smooth. There is 22 ft. on the bar at low water tide rises $2\frac{1}{2}$ ft. neaps, and 5 ft. springs. The bar is subject at all times more or less to ocean swell, and it is impossible to get into the harbour against strong S. or S.W. winds. The harbour is protected by the Southern Breakwater, which is 4,620 ft. long, and the Northern Breakwater, 2,980 ft. long. The navigable channel has a width of 300 ft., and a depth varying from 21 ft. to 22 ft. at low water, spring tides. Vessels loading at the steam and hydraulic cranes generally load down to 23 ft. 9 in. to 24 ft. 8 in. There is a wharf at Stockton (on the north side of the harbour) which is 660 ft. long. There are four patent slips capable of taking up ships of 100, 100, 200, and 1,000 tons reg. respectively. The charge for taking up and down is 6*d.* per reg. ton. Rent 6*d.* per ton per day. The shipment of coal is carried on with the following appliances : Six hydraulic movable cranes in New Basin ; twelve hydraulic cranes at Bullock Island Dyke, belonging to the Government ; ten shoot and one dump, the estimated capabilities being as follows : Hydraulic crane

New South Wales—Newcastle (continued).

9,900 tons per day of 10 hours; private shoots, 2,200 tons ditto. There are also ballast jetties in the north harbour, where vessels of 14 ft. draught can discharge into lighters. The total wharfage is 12,756 ft.

Time Signals.—Chronometers can be checked. A ball is hoisted half-way up a flagstaff on the top of the Custom House 5 minutes before the signal. The ball is dropped at 1 h. 0 m. 0 s. p.m. standard time of New South Wales, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 1 h. 7 m. 9 s. local mean time.

Pilotage.—See **New South Wales**. Maximum pilotage, in or out, £20. Harbour removal pilotage, £1 for every 500 tons over 1,000. **Towage:**—If required, is performed at the following rates: From sea, 6d. per reg. ton; to sea, free. Removals by tug in the harbour. Sailing vessels—1 tug, £2; for each extra tug, £1. Steamers—Up to 1,000 tons register (one tug), £2 10s.; 1,000 to 1,300 tons reg., £2 17s. 8d.; 1,300 to 1,500 tons reg., £3 7s. 3d.; 1,500 to 3,000 tons reg., £4; and each extra tug, £3.

Port Charges.—Entrance and Clearance:—£5 5s.; steamers, £10 10s. **Tonnage Rates:**—Steamers and sailing vessels, $\frac{1}{2}$ d. per gross reg. ton per day while loading: minimum charge, 10s. **Free Lay-days:**—During which vessels, fully laden, discharging their cargoes at any wharf, are exempt from the payment of tonnage rates: For vessels not exceeding 100 tons reg., 2 days; exceeding 100 tons and not exceeding 200 tons reg., 4 days; exceeding 200 tons and not exceeding 300 tons reg., 6 days; exceeding 300 tons and not exceeding 400 tons reg., 8 days; and for every additional 100 tons or part of 100 tons, 1 day. **Stevedoring** * and dumping cargo as per agreement. **Coal:**—Price 8s. to 11s. per ton for large, and 6s. 6d. for small. The charge for lighterage and hoisting of coal to vessels for stiffening is 2s. per ton. **Ballast** can be discharged alongside the Government jetties. The usual charges for lightering stone ballast, sand, and mud, 2s. per ton. If stevedores are employed to fill and tip the ballast, the charge is from 10d. per ton. **Trimming Coal:**—4d. per ton; steamers, 4d. to 6d. per ton. Bunkers, 7d. to 9d. This charge is always paid by the ship. **Provisions:**—Meat, 4 $\frac{1}{2}$ d. per lb. Groceries, ships' stores, etc., can always be obtained at moderate rates. **Water:**—4s. per 1,000 gallons from dyke service, and 6s. per 1,000 gallons from water tank.

Pro Forma Charges on a ship of 2,264 tons reg., with 1,165 tons sand ballast, and loading 3,645 tons coal:—

	£	s.	d.
Inward pilotage, 2,264 tons, at 1d. per ton	9	8	8
Outward pilotage, 2,264 tons, at 2d. per ton	18	17	4
Pilot removals in harbour (4), at £3	12	0	0
Harbour and light rates, at 4d.	37	14	8
Towage, 2,264 tons at 6d. per ton	56	12	0
„ removals in harbour (4), at £2	8	0	0
Wharfage dues, loading at $\frac{1}{4}$ d. per ton per day, 4 days	18	17	4
Ballast, 1,165 tons at 3d. per ton (ship filling and tipping)	14	11	3
Trimming, 3,645 tons coal at 4d. per ton	60	15	0
Coal for ship's use, 15 tons	5	12	6
Doctor's account	3	3	0
United States Consul's fee	0	8	3
Bill of health	0	10	6
Copying articles	0	10	6
Shipping office fees	1	0	0
Advance notes (4 men)	11	0	0

Carried forward 259 1 0

* **Wharfage.**— $\frac{1}{2}$ d. per ton loading gross on steamers; net reg. on sailing vessels.

New South Wales—Newcastle (*continued*).

	£	s.	d.
Brought forward	259	1	0
Advertising crew and petties		1	5 0
Cash to captain	70	0	0
Butcher's account	10	0	0
Ship chandler's account	5	0	0
Water account	2	0	0
Vegetables account	8	5	0
Shipsmith's account	2	6	0
Rating chronometers	1	1	0
Customs agency (entrance and clearance)	5	5	0
	£364	3	0

If the crew work the ballast, the charge for hoisting and trucking away is 5*d.* per ton.

PORT MACQUARIE.

Port Macquarie, in lat. 31°25' S., long. 152°55' E., is situated at the mouth of the river Hastings, 185 miles N.E. of Sydney.

Population.—About 1,000.

Exports.—Sawn timber, girders, railway sleepers, wine, pigs, maize, and other agricultural products.

Accommodation.—The channel over the bar carries a depth of about 12 ft. at high water springs. There is good anchorage off the bar, about $\frac{1}{2}$ a mile out, in from 5 to 6 fathoms. The range of tide inside the bar is from $1\frac{1}{2}$ to $4\frac{1}{2}$ ft.; there is a public wharf which is now sanded up. At Hamilton, about 3 miles up the river, there is a slip where vessels of about 100 tons can be taken on and repairs effected. At Tacking Point, which is $3\frac{3}{4}$ miles distant, there is a lighthouse having a fixed white light of the fourth order, visible at a distance of 12 miles in moderately fine weather.

Pilotage.—See **New South Wales**. **Towage:**—There is a Government tugboat, which charges at the rate of 4*d.* per ton each way, with a minimum of 30*s.*

Port Charges.—For **Harbour, Tonnage, and Light Dues**, see **New South Wales**. **Labour:**—Casual labour can be got here from 1*s.* per hour, to a limited extent. **Provisions:**—Water and provisions can be obtained at reasonable rates.

PORT STEPHENS.

Port Stephens is in lat. 32°40' S., long. 152°25' E.

Accommodation.—This harbour is easy of access, there being no bar at the entrance. Vessels of 24 ft. draught will find a good and safe anchorage inside. The depth at entrance is 30 ft. at high water, and 25 ft. at low water. There is 500 ft. of quayage, with a depth alongside of 12 ft. at high water ordinary springs, and 7 ft. at low water ordinary springs. There are no cranes.

A harbour light is exhibited on Nelson's Head, visible 8 to 10 miles in clear weather. The light shows bright to seaward, and will be partially eclipsed over the entrance shoal, and make out red after the shoal is passed, and Nelson Head can be steered for. When Nelson Head is passed the light will again make out bright, and be a guide for picking up an anchorage, or proceeding further into Port Stephens.

New South Wales—Sydney (*continued*).

Charges for Government Docks.—4,000 tons and under, 6*d.* per ton first day or part of day, and 4*d.* per ton for each succeeding day. 4,001 tons to 5,000 tons, 5½*d.* per ton first day or part of day, and 3½*d.* for each succeeding day. 5,001 tons to 6,000 tons, 5*d.* per ton first day or part of day, and 3*d.* per ton for each succeeding day. 6,001 tons and over, 4½*d.* per ton for first day or part of day, and 3*d.* per ton for each succeeding day. Minimum charge £20 for first day, and £15 for each succeeding day.

Other Dock Charges.—Based on gross tonnage : 4,000 tons and under, 6*d.* net per ton, first day. 4,001 to 5,000 tons, 5½*d.* per ton first day. 5,001 to 6,000 tons, 5*d.* per ton first day. 6,001 and over, 4½*d.* per ton, first day, with a minimum rate of £5. **Slip Hire** :—Based on the gross tonnage 6*d.* net per ton, first day. Minimum rate, £3.

Time Signals.—Chronometers can be checked. A ball is hoisted half-way up on the top of the Astronomical Observatory 5 minutes before the signal. The ball is dropped at 1 h. 0 m. 0 s. p.m. standard time of New South Wales, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 1 h. 4 m. 49·5 s. local mean time.

Pilotage.—Compulsory.—See **New South Wales**. Pilots detained in quarantine are paid £1 per day, 8*s.* of which is charged to the vessel.

Towage :—Into Sydney or Newcastle from within a radius of 20 miles, to the vessel's first anchorage, 3*d.* per reg. ton. Out of Sydney or Newcastle to a safe offing, 3*d.* per reg. ton ; from or off Sydney to Newcastle and out to a safe offing, or from or off Newcastle to Sydney and out to a safe offing, 8*d.* per reg. ton. Into Sydney, thence to Newcastle, and out to a safe offing, or into Newcastle, thence to Sydney, and out to a safe offing, 11*d.* per reg. ton. Each removal at either port : Steamers, £4 for the first tug, and £3 for each additional tug. Sailing vessels, £2 for the first tug, and £1 for each additional tug.

Port Charges.—**Harbour and Light Dues** :—4*d.* per ton, paid once in 6 months. **Tonnage Dues** :—Vessels over 240 register tons, ½*d.* per reg. ton for the first 6 days, for vessels up to 5,000 tons, and ¼*d.* for every ton over 5,000 tons per day. **Harbour Removal Dues** :—Vessels not exceeding 300 tons, £1 ; 301 to 400, £1 5*s.* ; 401 to 500, £1 10*s.* ; 501 to 600, £1 15*s.* ; 601 to 800, £2 ; 801 to 1,000, £2 10*s.* ; and an additional £1 for every additional 500 or part of 500 tons, up to a maximum of 2,000 tons. **Inward Wharfage Rates** :—Goods arriving from any port outside New South Wales (with the exception of about twenty specified articles), 2*s.* 6*d.* per ton, according to measurement. No outward wharfage rates. **Labour** :—1*s.* 3*d.* per hour, and 1*s.* 9*d.* per hour overtime. **Stevedore** :—For pressing and stowing wool, 3*s.* 3*d.* to 3*s.* 9*d.* per bale. **Ballast** :—3*s.* 6*d.* per ton. **Water** :—Fresh water, 1*s.* 6*d.* per ton. **Coal** :—Newcastle 15*s.* 6*d.*, and Southern 13*s.* per ton. **Provisions** :—Fresh beef, 4½*d.* per lb. ; salt, £4 5*s.* per tierce of 336 lb.

NORFOLK ISLAND.

Norfolk Island, a British Imperial Crown Colony, administered by the State Government of New South Wales, is situated about 1,100 miles north-east of Sydney and nearly midway between New Zealand and New Caledonia. It has a fertile soil, but no good harbour.

Population.—940.

Imports.—Clothing, provisions, etc.

New South Wales—Norfolk Island (*continued*).

Exports.—Whale oil, hides, wool, fungus, seeds, and plants.

Accommodation.—There is an open roadstead, and cargo is loaded and discharged by means of ordinary whale boats, with a carrying capacity of from 1 to 2 tons.

The monthly mail steamers from Australia to the New Hebrides call here regularly.

Pilotage.—Local pilots can be obtained if required. Rates according to agreement.

Port Charges.—**Boat Hire** :—8s. per ton, loading and shipping cargo. **Ballast** :—8s. per ton, or as per agreement. **Labour** :—5s. per day.

QUEENSLAND.

The State of Queensland comprises the whole of the N.E. portion of the Australian continent, including the adjacent islands in the Pacific Ocean and in the Gulf of Carpentaria. It contains an area of about 670,500 square miles, with an estimated population of 541,795. The coast line, extending over 2,250 miles, is dotted with harbours, most of which are becoming active industrial and commercial centres.

Light Dues.—No light dues are levied at any port in Queensland.

Harbour and Pilotage Dues.—The pilotage service in Queensland is conducted by the State authorities, the rates at the various ports being as under :—

Anchorage.	Rate per ton.	Minimum.
	s. d.	£ s. d.
Brisbane River above Bar	0 6	2 10 0
Fitzroy River above Rocky Point		
Mary River above North Head		
Norman and Albert Rivers		
Brisbane Roads or above Pilot Station, Moreton Bay	0 5	1 10 0
Broad Mount or above the Light Ship, Keppel Bay		
White Cliffs, Great Sandy Island Strait, or above that anchorage		
Bundaberg		
Port Curtis above Observatory Point	0 4	1 0 0
Broad Sound above Basin		
Sweer's Island		
Pilot Station, Moreton Island		
Wide Bay and Great Sandy Island Strait	0 4	1 10 0
Pilot Station, Burnett River		
Sea Hill, Keppel Bay		
Observatory Point, Port Curtis		
Baffle Creek	0 4	1 0 0
Basin, Broad Sound		
Pioneer River		
Port Denison		
Cleveland Bay	0 4	1 0 0
Port Hinchinbrook		
Trinity Bay		
Port Douglas		
Endeavour River	0 4	1 0 0
Thursday Island		
Johnstone River		
Mourilyan Harbour		
Moreton Bay, via Southport	0 4	1 0 0

All over-sea or inter-state vessels, the masters of which are not exempt from pilotage, if cleared for more than one port in Queensland, pay on pilotage rate of 8d. per ton at the first port entered, and one pilotage rate of 4d. per ton at the second port of entry, but are not required to pay any further pilotage at any other port included in the original clearance. Vessels putting into or returning to Queensland ports through stress of weather or other sufficient cause, and not breaking bulk, or landing or taking on board passengers, pay half pilotage rates, but should any such vessel when putting into or returning to port, be unable from any cause whatever to obtain the services of a pilot, then no charge is made. Vessels whose original port of clearance and final port of discharge are not within

Queensland.

the State, calling at any Queensland port, but not carrying cargo coastwise, are exempt from the payment of pilotage rates, but pay on all passengers or cargo landed or shipped the undermentioned dues :—

For every ton of cargo, 1s. 6d.

For every passenger, 1s. 6d.

Horses or horned cattle, 1s. 6d. per head.

Sheep, 2d. each.

Harbour Pilotage.—Vessels employing the services of a pilot, or the harbour master, or his deputy, for the purpose of removal within the limits of any port, pay according to the following scale :—

Tonnage.		Under 3 Miles.	3 to 10 Miles.	10 to 20 Miles.	20 to 30 Miles.	30 Miles and upwards.
		£ s.	£ s.	£ s.	£ s.	£ s.
Every vessel under	100 tons .	0 10	0 15	1 0	1 5	1 10
.. of 100 and under	200 " .	1 0	1 5	1 10	1 15	2 0
.. " 200 "	300 " .	1 5	1 11	1 17	2 3	2 10
.. " 300 "	400 " .	1 10	1 17	2 5	2 12	3 0
.. " 400 "	500 " .	1 15	2 4	2 12	3 1	3 10
.. " 500 "	600 " .	2 0	2 10	3 0	3 10	4 0
.. " 600 "	700 " .	2 5	2 16	3 7	3 19	4 10
.. " 700 "	800 " .	2 10	3 2	3 15	4 7	5 0
.. " 800 "	900 " .	2 15	3 9	4 2	4 16	5 10
.. " 900 "	1,000 " .	3 0	3 15	4 10	5 5	6 0
.. " 1,000 "	1,200 " .	3 5	4 3	5 1	6 0	7 0
.. " 1,200 "	1,500 " .	3 10	4 13	5 16	7 0	8 0
.. " 1,500 "	2,000 " .	4 0	5 10	7 0	8 10	10 0
.. " from 2,000 tons upwards		5 0	6 15	8 10	10 5	12 0

Quarantine Limits.—Under the provisions of "*The Quarantine Act of 1886*" the Marine Board have appointed the undermentioned places in the various ports as the limits above which vessels from beyond sea, shall not be brought until they have been admitted to pratique, viz. :—

Port.	Limit.
Brisbane	The Pile Lighthouse
Laryborough	Southern end Dundathu Reach, Mary River
Dundaberg	Burnett River Bar
Madstone	Barney Point
Lockhampton	Egg Island
St. Lawrence	The Fairway Buoy
Lackay	Flat Top Island
Town	Cage Buoy
Nowville	The Fairway Buoy
Bungeness	The Bar of Enterprise Channel
Hardwell	The Three Fathom Line
Marins	The Fairway Buoy
Port Douglas	The usual anchorage
Coktown	Endeavour River Bar
Thursday Island	Vivien Point
Normanton	Norman Bar Lightship
Murketown	The Fairway Buoy

BRISBANE.

Cape Moreton is in lat. 27°30' S., long. 152°58' E. The harbour of Brisbane comprises all the water within the boundary drawn by a line starting at the S.E. extremity of Caloundra Heads; thence to Cape Moreton; thence by Moreton Island to its southern extremity of Stradbroke

Queensland—Brisbane (*continued*).

Island; thence by Stradbroke Island to its southern extremity; thence to the extremity of the mainland forming the south head of the passage or opening there, and from thence by the mainland to the point of commencement, taking in all rivers, creeks, and navigable waters. The city of Brisbane is about 16 miles within the river from its mouth.

Population.—135,655.

Accommodation.—The dredged channels of the river are 300 ft. wide, with a nominal depth of 24 ft. at low water from the roads to the Custom House, and 20 ft. in the town and South Brisbane reaches. The N.W. channel is now used for all large vessels drawing over 20 ft. Vessels drawing 24 ft. can proceed to Brisbane, and 25 ft. to Pinkenba. The anchorage at the roads, off the mouth of the Brisbane River, is about 30 miles from Cape Moreton. Vessels unable to ascend the river to Brisbane anchor here in 4 fathoms, about 3 miles from the shore. The holding ground is good, and the anchorage safe. The channel from the roadstead to the city is well lighted, but all sailing vessels and steamers exceeding 350 ft. in length require to be towed. Vessels up to 600 ft. in length can be accommodated at the wharves. A new wharf, 1,080 ft. long, with railway accommodation alongside, is in course of construction. Plenty of cold storage accommodation is available. There is a dry dock belonging to the Government 457 ft. long over all, 55 ft. wide at the entrance at the high water level, and 19 ft. on the sill at ordinary high springs. There are two private patent slips to raise 1,000 and 400 tons respectively. Repairs can be executed at one of the five yards, where there are sheers of 50, 20, and 15 tons.

Time Signals.—Chronometers can be checked. A black ball is hoisted half-way up on the top of the Signal Tower five minutes before the signal, and close up three minutes before. The ball is dropped at 1 h. 0 m. 0 s. p.m. standard time of Queensland, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 1 h. 12 m. 6 s. local mean time.

Pilotage.—Compulsory. For charges see **Queensland**.

Towage:—*Sailing vessels*, per reg. ton as follows:—

	s.	d.
Cape Moreton to Brisbane	1	6
Cape Moreton to Brisbane and back to Brisbane Roads	2	0
Cape Moreton to Brisbane and back to Cape Moreton	2	6
Yule Roads to Brisbane	1	3
Yule Roads to Brisbane and back to Brisbane Roads	1	9
Yule Roads to Brisbane and back to Cape Moreton	2	3
Brisbane Roads to Brisbane	1	0
Brisbane Roads to Brisbane and back to Brisbane Roads	1	6
Brisbane to Brisbane Roads	1	0
Brisbane Roads to Cape Moreton	0	6
Brisbane to Cape Moreton	1	6
Steamers, say £30 up, and £30 down river.		

Inter-colonial vessels:—

Cape Moreton to Brisbane and back to Brisbane Roads	1	6
Brisbane Roads to Brisbane and back to Brisbane Roads	1	3
Brisbane to Brisbane Roads	0	9

Steamers.—Pile Light to Brisbane, or vice versa, £20; Pile Light to Pinkenba, or vice versa, £15; Pinkenba to Brisbane or vice versa, £15; Hamilton to Brisbane, or vice versa, £12; Hamilton to Bulimba or vice versa, £8. The above rates apply to steamers up to 5,000 tons reg.; over

Queensland—Brisbane (continued).

5,000 tons, 10s. for every 500 tons or part thereof. Removals within town reaches, £5 per tug.

Port Charges.—Tonnage and Harbour Dues :—See **Queensland.**
Berthing :—Tugs to berth ships free of charge if performed within two hours after arrival at Brisbane. **Tow-lines :—**Vessels to provide their own tow-lines, but if supplied by the tug an extra charge of £5 from Cape Moreton or the Yule Roads, or £2 from Brisbane Roads, to be paid.
Loading Charges :—Wool, dumping, 1s. 9d. per bale; stowing, 1s. 6d. per bale. Tallow, 2s. 6d. per ton; ores, 1s. 6d. per ton; general cargo, 1s. 6d. per ton; frozen meat, 3s. 6d. per ton; frozen butter, 2s. 6d. per ton. **Discharging :—**1s. 3d. per ton. Heavy lifts by agreement, say £1 per ton above 3 tons, and up to 10 tons; above this special rates.
Labour :—1s. 3d. per hour between 7 a.m. and 5 p.m.; afterwards 1s. 9d. per hour. Working in refrigerator holds, 3d. per hour extra. **Lighterage :—**Vessels discharging in the bay pay 5s. 6d. per ton lighterage to Brisbane.
Brokerage :—With cargo, entrance £5 5s.; clearance £5 5s. In ballast, entrance £2; clearance £2. **Survey Fees :—**From £3 3s. to £10, according to the tonnage of the vessel. **Noting Protest :—**Foreign, £1; intercolonial, 10s. 6d. **Tally Clerks :—**10s. per day. **Ballast :—**Sand, 2s. to 2s. 3d. per ton; stone, 3s. to 4s. per ton; shingle, 4s. 6d. to 5s. 6d. per ton. Vessels arriving in ballast pay 1s. per ton for discharging. Lighters occasionally carry it away free to other vessels ballasting, but if it has to be discharged from the lighters the expense is heavy. **Wharfage :—***Steamers* loading or discharging pay no wharfage. *Sailing vessels* discharging, nothing; loading, 1s. per net reg. ton.

BUNDABERG.

Bundaberg, in lat. 24°50' S., long. 152°20' E., is on both sides of the River Burnett.

Population.—About 16,000.

Exports.—Sugar, timber, copper matte, syrup, and rum.

Accommodation.—Bundaberg is 9 miles from the mouth of the river, and vessels drawing 15 ft. can come here. Depth on the bar, 7 ft. at low water; rise of tide, 8 to 9 ft. at springs, and 3 to 4 ft. at neaps. At the wharves there are depths of 6 to 14 ft.

Pilotage.—See **Queensland.**

Port Charges.—Tonnage Dues :—A Harbour Board has now been established. Vessels whose original port of clearance and final port of discharge are not within the colony, calling at any Queensland port, but not carrying cargo coastwise, are exempt from the payment of pilotage rates, but pay the following dues on all cargo landed or shipped, from 3s. to 5s. per ton, according to the description of goods; for every head of horses or horned cattle, 2s. each; sheep, 1s. each. **Ballast :—**Stone or sand, 4s. per ton f.o.b.

CAIRNS.

Cairns is in lat. 16°55' S., long. 145°43' E., on Trinity Inlet.

Population.—5,500.

Exports.—Minerals, sugar, and timber.

Accommodation.—The approach to Trinity Inlet is a natural

Queensland—Cairns (*continued*).

channel 200 ft. wide, once inside of which there is sufficient water to float any vessel drawing from 3 to 6 fathoms for a distance of 3 or 4 miles up. The channel, which is $4\frac{1}{2}$ miles long, has a depth at high water of 20 to 22 ft. and at lowest spring tides 14 ft. The railway runs alongside the wharves. The total frontage of wharfage is 750 ft., with a depth, at 15 ft. distance, of from 14 to 22 ft. at low tide. Soft mud bottom at all wharves.

Pilotage.—For rates, see **Queensland**.

Port Charges.—**Entrance and Clearance** :—£2 2s. **Wharfage** :—Payable by consignees of cargo, 1s. per ton. **Labour** :—1s. 6d. per hour for any 8 hours between 6 a.m. and 6 p.m.; 2s. per hour overtime; 3s. per hour on Sundays and holidays. Coal and coke, 2s. per hour all round. **Berthage** :—Over-sea vessels, free. **Harbour Dues** :—Payable by consignee, except on special lines, 3s. per ton. **Ballast** :—According to arrangement.

COOK TOWN.

Cook Town, at the mouth of Endeavour River, is the port for the mining districts of Palmer River, Coen goldfields, and Annan tinfields. Lat. $15^{\circ}33'S.$, long. $145^{\circ}20'E.$

Population.—About 4,000.

Accommodation.—The harbour consists of a narrow channel running along the front of the town about a mile. The N.E. part has a depth of from 14 to 19 ft., the S. part 7 to 9 ft. A cutting, with a depth of 15 ft. at low water springs, has been made through the bar. Spring tides rise 7 to 9 ft.; neaps, 5 ft. Vessels of moderate size must moor head and stern. Coastal mail steamers up to 6,000 tons reg. berth at the wharves, and foreign going steamers anchor $1\frac{1}{2}$ miles from shore. There are four private wharves with minimum depths at low tide of 5, 9, 13, and 15 ft. respectively, at distance of 15 ft. from the wharf side. The bottom is mud, except No. 1 wharf (9 ft. depth), where it is rock. The anchorage is in a basin off the wharves. This basin is 800 ft. long by 430 ft. wide, with a mud bottom. There is a crane on the railway wharf to lift 10 tons.

Pilotage.—Compulsory. Pilotage is paid whether the services of the pilot are engaged or not. **Inwards** :—4d. per net reg. ton. Minimum, £1 **Outwards** :—4d. per ton. Minimum, £1. See **Queensland**.

Port Charges.—**Entrance and Clearance Fees** :—From £1 1s. to £5 5s. **Boat Hire** :—10s. per day. **Labour** :—1s. 6d. per hour. **Ballast** :—Stone ballast, 7s. 6d. per ton.

Pro Forma Charges on a steamer of 6,000 tons, with 200 tons of inward cargo, and 500 tons of cargo outwards :—

	£	s.	d.
Pilotage inwards	100	0	0
„ outwards	50	0	0
Discharging 200 tons	10	0	0
Loading 500 tons	25	0	0
Attending lines	0	10	0
Customs overtime, 12 hours	1	4	0
Commission on freight collected, £400, at $2\frac{1}{2}$ per cent.	10	0	0
„ „ engaged, £1,000, at 5 per cent.	50	0	0
Agency fee	5	5	0
Entrance and clearance	5	5	0

£257 4 0

Queensland.

GLADSTONE AND PORT CURTIS.

Gladstone and Port Curtis are in lat. $23^{\circ}53'$ S., long. $151^{\circ}12'$ E.

Population.—About 1,400.

Imports.—General merchandise.

Exports.—Horses, frozen beef and mutton, copper, gold, and manganese ores, hides, and tallow.

Accommodation.—Gladstone has a fine natural harbour, and steamers of the largest size can call in at any state of the tide. The Government jetty, which is about 320 ft. long has a depth of 20 ft. at low water springs, with a rise of 12 ft. There is a private wharf in Auckland Creek, where coasters berth. Railway connections on Government jetty to side of steamers. At Parson's Point the Meat Co. have a jetty with 20 ft. at low water.

Pilotage.—Compulsory. Steamers— $5d.$ per reg. ton. If in ballast, $2\frac{1}{2}d.$ per reg. ton. Sailing vessels— $5d.$ per ton. See **Queensland.**

Port Charges.—Entrance and Clearance Fees:—Steamers loading horses, £5 5s. Meat steamers, £10 10s. **Wharfage:**— $2s.$ per ton on cargo landed or loaded. **Boat Hire:**—About £1 per day. **Ballast:**—According to arrangement with Railway Department. **Labour:**— $1s. 3d.$ per ton ordinary time (from 7 a.m. to 5 p.m.); overtime, $1s. 9d.$ per hour. **Water:**— $3s.$ per 1,000 gallons at Government jetty.

MACKAY.

Mackay is in lat. $21^{\circ}10'$ S., long. $149^{\circ}15'$ E.

Population.—5,157.

Imports.—General produce and building materials.

Export.—Sugar.

Accommodation.—The port is situated on Pioneer River, at the entrance of which is a bar with 13 ft. of water on it at high water ordinary springs, and 7 ft. at high neaps. There are eight wharves, which can be reached at high water, ordinary springs, by vessels drawing 10 to 12 ft. The only public wharves are Bond Wharf and Railway Wharf. Their lengths are respectively 103 and 155 ft.; the former is dry, and the latter has 3 ft. of water 15 ft. from the side at low tide. Springs rise and fall 11 ft. Vessels usually anchor about $3\frac{1}{2}$ miles from the wharves in 5 fathoms, where there is good shelter from the prevailing winds under Flat Top and Round Top Islands. Loading and discharging are effected by steam lighters which run between the vessels and the wharves. In the river, vessels always have to lie aground at low water, but the bottom is sandy. Crane on railway wharf to lift 10 tons, but this wharf, owing to its bad condition, is closed to traffic.

The Mackay Harbour Board have in view the construction of a jetty which, when erected, will obviate lightering, and give facilities to ocean steamers. There are six lighters with an average capacity of 250 tons. Railway connections from wharves to the sugar mills.

Pilotage.—Compulsory. Steamers— $4d.$ per reg. ton in, and $2d.$ out. Same rates for sailing vessels. See **Queensland.**

Port Charges.—Mooring:— $10s.$ per tide per ship, or $1s. 8d.$ per ton on discharge of wharfage. **Wharfage:**—Inward wharfage, $2s.$ per ton.

Queensland—Mackay (*continued*).

Outward, 1s. per ton. **Entrance Fees** :—£2 2s. **Clearance Fees** :—£2 2s. **Towage** :—£5. **Boat Hire** :—£5. **Light Dues** :—Contained in pilotage. **Ballast** :—Free. **Labour** :—1s. 6d. per hour, and 2s. per hour overtime. **Brokerage** :—5 per cent. **Harbour Dues** :—If inter-colonial, 6d. per ton per month.

Pro Forma Charges on a steamer of 1,000 tons reg., with cargo of 1,500 tons in, and ballast out :—

	£	s.	d.
Harbour dues	37	10	0
Brokerage	2	10	0
Pilotage in and out, at 6d.	25	0	0
Boat hire	5	0	0
Lighterage	375	0	0
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	£445	0	0

MARYBOROUGH.

Maryborough is in lat. 25°32' S., long. 152°39' E., and is situated on the river Mary.

Population.—12,000.

Imports.—General manufactures, wines, spirits, tea, coffee, tobacco, and cigars.

Exports.—Coal, gold, copper, antimony, timber, wool, tallow, hides, sugar, molasses, rum, etc.

Accommodation.—Vessels drawing 24 ft. can come in by the northern entrance, and anchor with safety in 6 fathoms at the White Cliffs, 28 miles from town, where they can be lightered to the necessary draught. The southern entrance (by Wide Bay) affords about 6 ft. less water. The minimum depth between the Heads and the town is 9 ft. at low water (9 to 10½ ft. rise at spring tides at the town; 10 to 12½ ft. at the Heads). The river channel is affected by floods. At the town there are wharves belonging to the Government Corporation and private firms, having depths of from 8 to 20½ ft. at low water ordinary springs, with a rise of 6 to 10 ft., and a soft mud bottom. **Public Wharves** :—Government Wharf, 558 ft. of frontage, with a minimum depth of 12 to 14 ft. at low water. Queen's Wharf, 81 ft. of frontage, and 14 ft. at low water. Melbourne Wharf, 115 ft. of frontage, and 14 ft. at low water. There is a circular slip 280 ft. long, capable of lifting 560 tons.

Pilotage.—Compulsory for ocean-going vessels. See **Queensland**.

Towage :—According to agreement.

Port Charges.—For **Tonnage**, **Harbour**, and **Light Dues**, see **Queensland**. **Wharfage** :—1s. 8d. per ton on cargo. **Labour** :—1s. per hour.

NORMANTON.

Normanton, in lat. 17°52' S., long. 141°5' E., is on the river Norman, 50 miles from Kimberley, at which point the river empties into the Gulf of Carpentaria.

Population.—750.

Accommodation.—The town is only 28 miles distant, as the crow flies, from the entrance of the river, but owing to the winding of the latter the distance is increased to 55 miles. The port includes the whole of the river from the head of navigation to the 3 fathom contour off the entrance, includ-

Queensland—Normanton (continued).

ing all creeks and navigable waters within that area. Pratique must be obtained before entering the river, and no vessel is allowed to pass the Norman Bar Lightship until authorized by the medical officer. Vessels drawing 10 ft. of water can proceed up as far as Baffle Group, 40 miles from the entrance, and steamers of the largest capacity to the anchorage, which is 10 miles from the mouth of the river.

Pilotage.—Compulsory. Steamers and sailing vessels, minimum £2 2s.; maximum charge, 6d. per ton, inwards and outwards. Inter-colonial vessels and traders, 6d. per ton per month. Coasters, 4d. per ton per month. See **Queensland**.

Port Charges.—**Entrance Fees** :—£2 2s. **Clearance Fees** :—£2 2s. **Wharfage** :—2s. per ton. **Labour** :—1s. 6d. per hour; overtime, 2s. per hour. **Brokerage** :—5 per cent., with a minimum charge of £2 2s. **Lighterage** :—12s. 6d. **Water** :—2s. per 100 gallons.

Pro Forma Charges on a steamer of 800 net tons reg., with a cargo of general merchandise inwards, ballast out :—

	£	s.	d.
Pilotage inwards	20	0	0
Pilotage outwards	10	0	0
Entrance	2	2	0
Clearance	2	2	0
Water, 1,000 gallons	1	0	0
Brokerage	2	2	0
	<hr/>		
	£37	6	0

PORT CURTIS.

(See **Gladstone and Port Curtis**, p. 1559.)

PORT DENISON.

Port Denison is in lat. 20°0' S., long. 148°30' E.

Population.—About 2,000.

Exports.—Wool, tallow, hides, gold, horses, fruit, frozen meat, etc.

Accommodation.—The harbour is commodious and well-sheltered, and is entered by means of two channels—the south with 22 ft., and the north with 13 ft. 6 in. at low water springs. The south channel is with two pairs of leading lights. There is good anchorage in the harbour for vessels of any draught up to 24 ft., sand and clay bottom. Vessels discharge alongside a pier 2,800 ft. long, running out from the township of Bowen, which is situated at the head of a landlocked bay. Railway trucks go down the pier, and load direct from vessel's slings. On each side of the pierhead berths have been dredged, that on the N.E. side having 17 ft. at low water springs, and that on the S.W. side having 21 ft. at low water springs. An approach 200 ft. wide, and a swinging basin 700 ft. wide, have also been dredged, carrying 16 ft. at low water springs. Vessels drawing 24 ft. have berthed at this port.

Pilotage.—Compulsory. See **Queensland**.

Port Charges.—For **Harbour, Tonnage**, and **Light Dues**, see **Queensland**. **Entrance and Clearance** :—£2 2s. for either. **Stevedore** :—as per arrangement. **Labour** :—1s. 6d. per hour, day or night. **Water** :—Fresh water is delivered in tanks at the end of the jetty at 9s. 9d. per 1,000 gallons. **Provisions** :—Cheap and plentiful. Beef, 3d. to 5d. per lb.; mutton, 6d. per lb.

ROCKHAMPTON.

Rockhampton, in lat. 23°28' S., long. 150°35' E., is situated on the S.W. bank of the Fitzroy River, about 34 miles from its mouth.

Population.—20,000.

Imports.—General merchandise.

Exports.—Wool, gold, copper, hides, tallow, preserved meats, horses, cattle, etc.

Accommodation.—Vessels drawing 17 ft. come up to the town wharves, but vessels drawing up to 25 ft. use Broadmount and Port Alma (just inside the river mouth), and anchor in 4 fathoms, low water, loading and discharging by means of lighters. The following accommodation is available :—

Rockhampton.—2,164 ft. wharfage (with eight covered sheds), with depths at lowest spring tides varying from 11 to 21 ft., having a spring rise of 10 ft. and a neap rise of 6 ft. Connected by rail with the west and Broadmount.

Broadmount.—600 ft. wharfage (with large storage accommodation), with 19 ft. water lowest spring tides, having a spring rise of from 12 to 15 ft. and neap rise of from 8 to 10 ft. Connected by rail with Rockhampton (26 miles) and Lakes Creek Meat Works (22 miles).

Port Alma.—500 ft. wharfage (with large shed) with 25 ft. water lowest spring tides, having a spring rise of from 12 to 15 ft. and a neap rise of from 8 to 10 ft. Not connected by rail. Lighterage to Rockhampton (41 miles) is necessary.

Pilotage.—Compulsory. Steamers and Sailing vessels—6*d.* per net reg. ton ; 3*d.* per ton outwards if in ballast. Vessels from over-sea ports cleared for more than one port in Queensland pay pilotage 8*d.* per ton at first port, 4*d.* per ton at second port, and are then exempt at other ports on inward voyage. See **Queensland. Towage** :—1*s.* 3*d.* per reg. ton for one tug ; 1*s.* 8*d.* per reg. ton for two tugs. 25 per cent. reduction if in ballast.

Port Charges.—For **Tonnage, Harbour, and Light Dues**, see **Queensland. Entrance and Clearance Fees** :—£5 5*s.*, or as per arrangement **Ballast** :—3*s.* 6*d.* to 5*s.* per ton on board. **Labour** :—1*s.* 3*d.* per hour from 8 a.m. to 5 p.m. ; other hours, 1*s.* 9*d.* per hour ; special cargoes, 1*s.* 9*d.* to 2*s.* per hour. **Customs Officer** :—2*s.* per hour before or after Customs hours. **Water** :—3*s.* 4*d.* per 1,000 gals.

Pro Forma Charges on a sailing vessel of 1,000 net reg. tons with 3,000 tons of general merchandise in, and ballast out :—

	£	s.	d.
Pilotage inwards at 6 <i>d.</i> per reg. ton	25	0	0
„ outwards in ballast at 3 <i>d.</i> per ton	12	10	0
Towage inwards at 1 <i>s.</i> 8 <i>d.</i> per reg. ton (two tugs)	83	6	8
„ outwards in ballast at 1 <i>s.</i> per reg. ton	50	0	0
Ballast, 300 tons at 4 <i>s.</i> per ton	60	0	0
Wharfage and harbour dues at 9 <i>d.</i>	37	12	0
Noting protest	0	10	6
Customs overtime	0	10	0
Entrance and clearance	5	5	0
Water, 3,000 gals. at 3 <i>s.</i> 4 <i>d.</i> per 1,000 gals.	0	12	0
Discharging 3,000 tons cargo, six men 6 days	18	0	0

Queensland.

THURSDAY ISLAND.

Thursday Island, in lat. $10^{\circ}30'$ S., long. $142^{\circ}13'$ E., is the centre of the Torres Strait pearl shell fishery, and is equally or more important as a coal-ing station.

Accommodation.—Thursday Island is the first port of call for steamers from the W. or N.E., proceeding S., within the smooth water afforded by the Great Barrier Reef. The inner route is growing into much favour by steamers proceeding to the southern colonies of Australia, to New Zealand, etc., and by steamers bound for eastern and European ports. The port (Port Kennedy) is available at any state of the tide to steamers drawing up to 22 ft., and the anchorage is good, mud and sand. The area of the port is about 2 sq. miles. Vessels drawing up to 22 ft. can come up to the hulks off the town, and also to the pier. Vessels drawing over 22 ft. anchor under Black Rock. There are steam winches at the hulks. The pier (Government) is 900 ft. long, with 200 ft. berthing space at the T end. Tram lines run along the pier. Fresh provisions can be obtained at reasonable prices, but water is sometimes dear, although it can be obtained free of cost at some of the adjacent islands. There are coal hulks with a minimum stock of 1,000 tons.

Pilotage.—Compulsory. From Thursday Island to Townsville, £30; to Rockhampton, £35; to Brisbane, £40; to Newcastle or Sydney, £45; to Melbourne, £50.

Port Charges.—On vessels from beyond the colony cleared on original clearance for a port beyond the colony. **Tonnage Dues:**—1s. 6d. for each ton of coal, head of cattle, or cargo landed or shipped. Vessels whose final port of destination is within Queensland, calling at more than one port in Queensland, pay no tonnage dues, but pay 8d. per ton on reg. tonnage at first port, and 4d. per ton at next port, no dues being payable at remaining ports of call, if any. The dues in both cases cover harbour pilotage and harbour dues. **Light Dues:**—None. **Boat Hire:**—For one trip, 10s. within the harbour; £1 outside the harbour. **Entrance and Clearance:**—£2 2s. **Customs Overtime:**—2s. per hour, with a minimum for clearing of 5s.

Pro Forma Charges on a steamer loading 100 tons of coal:—

	£	s.	d.
Entrance and clearance at Customs	2	2	0
Boat hire	1	10	0
Tonnage dues at 1s. 6d. per ton	7	10	0
Customs overtime	0	10	0
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	£11	12	0

TOWNSVILLE.

Townsville, in lat. $19^{\circ}20'$ S., long. $146^{\circ}50'$ E., is situated 750 miles N.W. of Brisbane, on Ross Creek, Cleveland Bay.

Population.—About 15,500.

Exports.—Sugar, tallow, hides, wool, frozen and canned meats, live stock, bananas, gold, and copper ore.

Accommodation.—The harbour is enclosed between two long substantial stone breakwaters, extending out from the mouth of the creek into the bay, at the eastern end of which there is 1,950 ft. of wharfage accommodation, at which vessels drawing not more than 22 to 24 ft. may lay afloat

Queensland—Townsville (*continued*).

at all states of the tide, the rise and fall of which is from 4 to 12 ft. The entrance to the harbour is by the Platypus Channel, which is 8,000 ft. in length, 250 ft. wide, and with 17 ft. of water at low water ordinary spring tides. This channel leads to the Swinging Basin, which is 500 ft. wide and 17 ft. deep. The Board's wharf on the Western breakwater is 100 ft. by 20 ft. and can be approached through a channel 100 ft. wide, which has a minimum depth of 12 ft. at low water ordinary springs. There is a patent slip at Ross Creek, with a lifting power of 650 tons.

All inter-state steamers now berth at the wharves, as also the over-sea vessels loading frozen meat, etc.

The jetty wharves are connected with the railway system. Cargo may be landed direct from the ship's hold into railway trucks, and vice versa, and there is a 20-ton steam crane provided for the use of shippers. The entrance is marked by a lighthouse on Cape Cleveland to the south, and Bay Rock to the north, and in the bay no dangers exist.

The depth on Rocky Bar, at the entrance to Ross Creek, is 7 ft. at low water ordinary spring tides. There are four public wharves, with an average depth alongside at high water of 15 ft., the respective minimum depths at low water being 12, $6\frac{1}{4}$, $3\frac{1}{2}$, and $4\frac{1}{2}$ ft.

Pilotage.—See **Queensland. Towage**:—According to distance, but the usual fee for bringing a vessel from the outside anchorage to the wharves is £10.

Port Charges.—Berthage:—At the Harbour Board's wharves, $\frac{1}{4}d.$ per gross ton per day or part of a day, with a minimum charge of £1 per day for vessels of over 200 tons gross. Vessels of 200 tons and under pay 10s. per day, or part of a day. **Entrance**:—£2 2s. **Clearance**:—£2 2s. **Water**:—There is an abundant supply of fresh water at 4s. per 1,000 gallons.

Pro Forma Charges on a steamer of 2,227 tons net reg., unloading cargo, and loading 58 horses for Manila:—

	£	s.	d.
Wharf labour	5	9	10
Running ship's lines	1	10	0
Pilotage (tonnage dues)	4	10	0
Customs and harbour board overtime	1	6	0
Customs duty on stores	0	13	2
Water, 12,900 gallons at 4s.	2	11	7
Agency fee	5	5	0
American Consul's fee	1	11	6
Telegrams and cables	3	2	0
Berthage, 1 day, 3,787 tons at $\frac{1}{4}d.$	3	18	11
	£29	18	0

Pro Forma Charges on a steamer of 1,893 net reg. tons, calling from the East, landing 101 tons of cargo and two passengers:—

	£	s.	d.
Stevedoring	10	12	1
Sunday time, etc.	4	12	3
Running ship's lines	1	10	0
Delivering cargo, 101 tons at 3d.	1	5	3
Berthage, 1 day, 3,026 tons at $\frac{1}{4}d.$	3	3	0
Customs and harbour board overtime	1	11	6
Entrance and clearance	2	2	0
Tonnage dues (pilotage)	3	1	8
Postages, petties, telegrams, etc.	1	16	3
Commission on freight	1	9	0
	£31	3	0

SOUTH AUSTRALIA.

The State of South Australia lies between lats. 26° and 38° S., and longs. 129° and 141° E. Its principal sea-board is that fronting on to the Southern Ocean. The State also administers the territory known as the Northern Territory, extending from the 26th parallel to the shores of the Indian Ocean, the Arafura Sea, and the Gulf of Carpentaria, the whole having an area of 903,690 square miles, with an estimated population of 392,664.

Light Dues.—Over-sea Vessels :—3*d.* per ton reg., both in and out ; provided, however, that any ship calling only for orders and neither discharging nor loading cargo, nor landing or embarking any passengers, pay one-half of these rates. **Inter-state Vessels :—**From or to any port in the Australian colonies, 1½*d.* per ton in, and the same out. Any ship en route to or from any Australasian colony discharging or loading a part of her cargo, or landing or embarking a portion of her passengers in this State, pay only at the rate of 1½*d.* per ton, in and out. Any ship sailing or clearing for a port beyond the limits of the State via Port Adelaide will, in addition to the above dues, be charged a coasting due at the rate of ½*d.* per ton. These light dues will not, however, at any time be charged at a greater rate than 6*d.* per ton in any one period of 6 months.

Mooring Dues.—The following dues are charged for the use of moorings by vessels not exceeding 80 tons net reg., which are bona fide sea-going vessels, viz. :—

For the first month or part of a month	Nil.
For each month or part of a month after the first month (payable in advance)	10 <i>s.</i>

BEACHPORT.

Beachport, in lat. 37°38' S., long. 140°0' E., is 357 miles S.E. from Adelaide.

Population.—100.

Imports.—General merchandise.

Exports.—Wool, wheat, barley, oats, and potatoes.

Accommodation.—There is a depth of 23 ft. at high water, and 19 ft. at lowest spring tides. Beachport is the terminus of the Mt. Gambier Railway.

Pilotage.—Nil.

Port Charges.—Entrance and Clearance :—10*s.* 6*d.* **Wharfage :—**1*s.* 8*d.* per ton general cargo ; wool, 6*d.* per bale ; grain, 1*s.* per ton. **Labour :—**1*s.* per hour.

Pro Forma Charges on a steamer of 524 tons reg., with cargo of coal in and ballast out, drawing 19 ft. loaded :—

	£	s.	d.
Harbour dues	4	19	9
Entrance and clearance	0	10	6
Superintending and weighing at 10 <i>s.</i> per 100 tons	2	12	6
Storekeeper's account	6	0	1
Wharfage	10	1	11
Labour, etc.	44	2	6

£68 7 3

South Australia.**EDITHBURGH.**

Edithburgh, in lat. $35^{\circ}5'$ S., long. $137^{\circ}45'$ E., is 57 miles W. of Adelaide.

Population.—450.

Exports.—Salt and gypsum.

Accommodation.—The harbour is easy of approach, and offers fair shelter, interference with loading through either wind or sea being very unusual. There is a jetty 568 ft. long, with a depth of 16 ft. 6 in. alongside, situated on De Mole Point, inside Troubridge shoal. There is 14 ft. at the outer end, capable of accommodating an ordinary sized vessel. A white light is fixed at the end of the jetty.

A cable has been laid between the red pole, with three arms situated on the cliffs near the jetty and Troubridge Shoal lighthouse, and vessels should avoid this when anchoring.

Port Charges.—For **Light** and **Mooring Dues**, see **South Australia**.

KINGSTON.

Kingston, or Port Caroline, in lat. $36^{\circ}50'$ S., long. $139^{\circ}51'$ E., is situated on Lacepede Bay, and is 11 miles from Cape Jaffa, and 293 miles E. of Adelaide by rail.

Population.—About 700.

Exports.—Wool, skins, hides, tallow, bark, and wheat.

Accommodation.—Lacepede Bay is formed by the bight in the coast between Cape Jaffa and Granite Rocks. It is a remarkable fact that this bay, although apparently exposed to the ocean swell, affords safe anchorage in all weathers, there being tolerably smooth water even in the height of a westerly gale. Vessels should keep as far out of the bight between Encounter and Lacepede Bays as possible; it is a dangerous place with the wind blowing on shore, or to be becalmed in; but once in Lacepede Bay vessels are safe in any weather, and can anchor as close inshore as is required; the water shoals very gradually, and there are no obstructions in the way. Vessels anchor, according to draught, anywhere inside the 5 fathom line to S. of the jetty, with no heavy range on the cable. Wool ships usually bring up with 1 fathom under them, at low water, when loaded. An iron-screw pile jetty runs out for $\frac{3}{4}$ of a mile, with a fixed white light at the end.

Pilotage.—A pilot can be had if signalled for.

Port Charges.—For **Light Dues**, see **South Australia**. **Lighterage**:—Wool, 9d. per bale dumped, and 1s. stowed; wheat, 4d. per bag, or 5d. for small lots. (Vessels do not pay lighterage, as charters are usually made from the anchorage.) **Ballast**:—Sand, 3s. per ton at jetty, or 5s. at the anchorage. **Water** is supplied by the Railway Co.

PORT ADELAIDE.

Port Adelaide, in lat. $34^{\circ}57'$ S., long. $138^{\circ}40'$ E. is situated on an arm of the sea known as Port Adelaide River, on the eastern shore of the Gulf of St. Vincent. Distance from Liverpool, 10,710 miles.

Population.—Including suburbs, 21,000.

Exports.—Wheat, wool, salted hides and skins, frozen meat, copper, zinc, and lead ore, tallow, wine, silver, lead, gums, fruits, eggs, and poultry.

South Australia—Port Adelaide (continued).

Accommodation.—The river entrance to the inner harbour is navigable for vessels under 44 ft. beam, to above Jervois Railway Bridge. Below the bridge, vessels up to 490 ft. long, and with a draught up to 28 ft. 2 in., have navigated it. The channel is 23 ft. deep at low water springs, and 31 ft. to 32 ft. at ordinary high spring tides. The width is nowhere less than 250 ft., and in some places 500 ft. The fairway is well defined by beacons and leading marks, which are lighted at night. The inner harbour has about 2½ miles of wharves, with from 10 to 24 ft. alongside at low water springs. A swinging berth 600 ft. long has been deepened to 23 ft. low water springs, opposite the N. end of the ocean steamer's wharf. A new wharf is now in course of construction, and should be available next year. This wharf will be 2,500 ft. long, with a depth of 28 ft. at low water springs alongside, and the construction of a graving dock is being considered. The outer harbour, now under construction, is situated in the river, 2 miles from its mouth. The completed portion now in use has available 900 ft. wharf frontage with 30 ft. at ordinary low water springs minimum depth of water in the entrance channel, swinging berth, and at the wharf. The swinging berth, abreast of the wharf, is 1,126 ft. wide by 1,600 ft. long, and when finished will have a wharf frontage of 1,500 ft.; swinging berth, depth at low water, 33 ft., breadth, 1,126 ft., length, 3,000 ft.; and entrance channel 400 ft. wide.

The following are the principal wharves, quays, and cranes :—

Name of Wharf.	Length.	Depth along-side at High Ordinary Springs.	Cranes.
River quays	13,626 ft.	20 to 32 ft.	Nil.
Port Dock	2,000 "	23 ft. on sill	Six hoists (3 ton steam).
South Australian Co.'s Wharf	5,720 "	18 to 31 ft.	Two cranes to lift 25 tons.
Commercial Wharf	689 "	32 ft.	Cranes from ½ to 15 tons.
Corporation Wharf	400 "	29 "	20-ton per hour ballast crane.
E. & A. Copper Co. Wharf	691 "	26 "	Three 20-ton per hour ballast cranes.
Glenville Wharf	450 "	27 "	Steam hoist.
Princes Wharf	260 "	23 "	Crane to lift 1 ton.
Port Wharf	225 "	26 "	Nil.
Queen's Wharf	900 "	34 "	Steam hoists.
Ocean Steamers' Wharf	1,000 "	31 to 36 ft.	Nil.
Government Wharf	700 "	32 ft.	Nil.

In the stream are Government moorings for the use of vessels awaiting orders, wharf berths, etc., for which the charges are very moderate. There are four private patent slips, capable of taking on vessels of 300 tons to 1,400 tons gross. There are eight yards where repairs can be executed and where there are several cranes, the largest being 20 tons.

Time Signals.—Chronometers can be checked. A ball is hoisted half-way up at the Semaphore 5 minutes before the signal, and close up 3 minutes before. The ball is dropped at 1 h. 0 m. 0 s. p.m. standard time of South Australia, equal to 15 h. 30 m. 0 s. Greenwich mean time, and 0 h. 3 m. 55.3 s. local mean time.

Pilotage.—Compulsory for vessels over 60 tons. Charges : In or out, up to 100 tons, £2 10s. Each ton above, 1½d.; with a maximum charge of £12 for sailing vessels, and £9 for steamers. One-fourth is deducted in the case of vessels towed or propelled by steam, with a minimum charge of

South Australia—Port Adelaide (*continued*).

£2 10s. inwards, and the same outwards. When bound only to or from the anchorage off the Semaphore, for any distance not exceeding 3 miles. Vessels up to 100 tons, £1; of 101 tons and not above 300 tons, £1 10s. above 301 tons and not above 500 tons, £2; above 500 tons and not above 1,000 tons, £3; vessels above 1,000 tons, £4. **Harbour Pilotage:—**

	£	s.	d.
For every vessel under 200 tons	{	Mooring	0 10 0
		Unmooring	0 5 0
		Removal	0 10 0
.. .. of 200 tons and under 300 tons	{	Mooring	0 15 0
		Unmooring	0 7 6
		Removal	0 15 0
.. .. of 300 tons and under 400 tons	{	Mooring	1 0 0
		Unmooring	0 10 0
		Removal	1 5 0
.. .. of 400 tons and under 500 tons	{	Mooring	1 0 0
		Unmooring	0 10 0
		Removal	1 10 0
.. .. above 500 tons and under 1,500 tons	{	Mooring	1 10 0
		Unmooring	0 15 0
		Removal	2 0 0
.. .. of 1,500 tons upwards	{	Mooring	2 0 0
		Unmooring	1 0 0
		Removal	2 10 0

Vessels piloted through Robinson Bridge to or from Port Dock or Company's Basin, or to or from Corporation Wharf through Jervois Bridge shall be charged the rates specified above for a "removal" of vessels of like tonnage, such charge to include mooring and unmooring.

If the pilot is required to stay on board until the ship has crossed the inner bar, a fee of £1 1s. per day is charged in addition to the ordinary pilotage rates.

Towage.—For *Sailing Vessels*, £5 for the first 200 tons net reg., and 7d. per ton for each additional ton, in or out. When a vessel requires a tug both in and out, the charge is £5 for the first 200 tons net reg., and 5d. for each additional ton, each way. Removal through bridges: £2 one bridge £3 for two bridges. *Steamers*: From anchorage to wharf, or from wharf out, £10 each tug each way; swinging or removal in harbour, £4 each tug.

Port Charges.—Light and Mooring Dues.—See **South Australia.**
Tonnage Dues.—*Sailing Vessels* (except as below), loading and discharging at the wharves, 3d. per reg. ton. *Sailing vessels* engaged in the coasting trade: Up to 100 tons net reg., free; over 100 and up to 200 tons net reg., 15s.; over 200 tons and under 250 tons net reg., £1. *Steamers*: Over-sea and foreign trade, 1½d. per ton net reg. *Steamers*, coasting and inter-state trading between Australian States and New Zealand. Up to 100 tons reg., 10s. per trip; from 101 tons to 250 tons, 15s. per trip; from 251 tons to 400 tons, £1; for every ton above 400 tons, 1d. per ton.

Special rates for (a) vessels of over 7,000 tons gross reg. tonnage, (b) mail steamers (British or foreign) subsidized to carry mail matter to and from Australian ports, or (c) arriving vessels of a draught of 26 ft. or over, viz.:—

On all goods landed, shipped, or transhipped, 3d. per ton, with a minimum charge of £5 and a maximum charge of £20.

Water is laid on at the wharves, and a plentiful supply may be obtained.

Pro Forma Charges on a steamer of 3,548 tons net reg., loading 2,320 tons of wheat and flour; 75 tons of tallow, gum, etc., and 3,500 tons of lamb and mutton:—

South Australia—Port Adelaide (continued).

	£	s.	d.
Light dues	44	7	0
Pilotage	23	10	0
Tonnage dues	22	3	6
Towage	20	0	0
Removal	4	0	0
Water	8	4	0
Customs overtime	3	7	0
Duty on stores	3	13	3
Stevedore, loading charges	349	10	10
Tally clerks	18	10	0
Stores, etc.	23	15	5
Shipper's overtime	16	12	9
Dunnage	3	0	0
Cartage	1	4	0
Entering and clearing at Customs	5	5	0
	<u>£547</u>	<u>2</u>	<u>9</u>

PORT AUGUSTA.

Port Augusta, in lat. 32°29' S., long. 137°54' E., is at the head of Spencer Gulf, about 200 miles from Cape Borda, Kangaroo Island.

Population.—About 1,000.

Exports.—Wheat, flour, wool, copper, silver ore, bullion, horses, etc.

Accommodation.—It is a natural, landlocked harbour, having a depth of 16 ft. at ordinary low springs in the channels, whilst alongside the new wharves, which are 1,188 ft. long, 22 ft. at low water can be obtained. There are Government moorings, with a depth of 22 to 28 ft., low water, ordinary springs. There is anchorage in any part of the estuary, but S. of Douglas Bank the best anchorage is towards the E. coast, in about 6 fathoms. In the strong S.S.E. winds which prevail during the summer months, when this port is most visited, a vessel seeking anchorage for the night, or a tide, would do well when inside Point Lowly to haul to the eastward, and let go in 6 fathoms, under the lee of Ward Spit. The rise of ordinary springs is from 9 to 12 ft.

Pilotage.—Compulsory. Pilots can be procured between Jarrold Point and Hummock Hill Eastern Shoal. Rates as follows :—

Sea Pilotage.—Between the Cruising Station and Port Augusta—

	Inward.	Outward.
	£ s. d.	£ s. d.
Ships not exceeding 100 tons	3 0 0	3 0 0
For every ton register above 100 tons.	0 0 2½	0 0 2½
Provided that in any case the pilotage of any ship does not exceed	16 16 0	16 16 0

One-fourth less if towed or propelled by steam.

Harbour Pilotage.—

	£	s.	d.
For every vessel up to 300 tons	{ Mooring	0	7 6
	{ Unmooring	0	5 0
	{ Removal	0	7 6
„ „ of 301 tons to 500 tons.	{ Mooring	0	10 0
	{ Unmooring	0	7 6
	{ Removal	0	10 0
„ „ „ 501 tons to 700 tons.	{ Mooring	0	15 0
	{ Unmooring	0	10 0
	{ Removal	1	0 0
„ „ „ 701 tons to 1,000 tons	{ Mooring	1	0 0
	{ Unmooring	0	12 6
	{ Removal	1	5 0
„ „ „ 1,001 and upwards if moored to wharf	{ Mooring	1	10 0
	{ Unmooring	0	15 0
	{ Removal	1	10 0
„ „ „ 1,001 and upwards if moored in stream	{ Mooring	1	5 0
	{ Unmooring	0	10 0
	{ Removal	1	10 0

South Australia—Port Augusta (*continued*).

A reduction made for steamers and vessels in tow of steamers.

To and from ballast ground, up to 500 tons, £1 5s. both ways. Ships above 500 tons, £2 both ways. Pilot's detention fee, £1 per day. **Towage** :—From Eastern Shoals to Port Augusta and back, 1s. per reg. ton.

Port Charges.—Tonnage Dues :—Steamers : $1\frac{1}{2}d.$ per ton. Sailing vessels, $3d.$ per ton. **Light and Mooring Dues**.—See **South Australia**. **Provisions** :—Beef and mutton very cheap. **Water** supplied direct into ship's tanks at 6s. per 1,000 gallons. **Stevedoring** :—1s. 4d. per ton. **Entrance** :—£2 10s. **Clearance** :—£2 10s. **Ballast** :—Discharging, 1s. 6d. per ton.

Pro Forma Charges on a vessel of 2,278 tons, loading wheat at Port Augusta :—

	£	s.	d.
Light dues at 6d. per ton	56	19	0
Tonnage dues at 3d. per ton	28	9	6
Pilotage in and out	33	12	0
Towage, in and out, at 1s. per ton	113	18	0
Harbour pilotage and removals, say	5	0	0
Stevedoring 3,500 tons, at 1s. 4d. per ton	233	6	8
Entering and clearing	5	5	0
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	£476	10	2

PORT DARWIN.

Port Darwin is in lat. $12^{\circ}25' S.$, long. $130^{\circ}55' E.$

Population.—Europeans, 1,110; Chinese and others, 2,056.

Imports.—Cotton and woollen fabrics, machinery, timber, and all kinds of general merchandise.

Exports.—Hides, horns, gold, copper and tin ores, dried fish, and cattle.

Accommodation.—The harbour is capable of accommodating vessels of the largest tonnage, having deep water and good holding ground, the best anchorage being between Fort Hill and Stokes Hill. A jetty has been built off Stokes Hill, capable of accommodating four large vessels of any draught of water, there being 11 fathoms alongside at low tide. Ship remaining more than 2 or 3 days should moor with open hawse to the N.W. All vessels must discharge their cargo at the railway jetty. Great caution should be observed in taking up an anchorage near the line of the telegraph cable during the strength of the tides, as the soundings are deep, and ships sometimes drag before bringing up. This caution should be specially observed during the N.W. monsoon. Springs range from 22 to 26 ft.; neaps $2\frac{1}{2}$ to 12 ft. There is a ballast crane on the jetty to discharge 10 to 15 tons an hour.

Pilotage.—There are no pilots, but the harbour master boards vessels on their arrival and points out the anchorage.

Port Charges.—Light Dues.—See **South Australia**. **Entrance** :—£2 2s. **Clearance** :—£2 2s. **Discharging** :—6s. per ton of cargo landed, paid by consignee. Horses and cattle, 1s. 6d. per head, and sheep and goats, 2d. per head, paid by vessel. **Water** :—Fresh water at the railway jetty, 10s. per 1,000 gallons. **Lay-days** :—Vessels of 100 tons, three lay-days for loading or discharging, and three additional days for every 100 tons

South Australia—Port Darwin (continued).

Stevedore :—Loading, 1s. per hour. Discharging, 1s. per hour. **Provisions** :—Beef, 3½d. per lb.; pork, 6d. per lb., and mutton, 3d. per lb. Fish plentiful and moderate in price, and vegetables, when in season, reasonable.

Pro Forma Charges on a steamer of 1,000 tons net reg., with a cargo of general merchandise in and ballast out :—

	£	s.	d.
Light dues, in and out	10	8	0
Noting protest	1	1	0
Bill of health	1	1	0
Entrance and clearance	4	4	0
Stevedore, discharging 2,000 tons	90	0	0
Ballast, 200 tons at 5s.	50	0	0
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	£156	14	0

PORT GERMEIN.

Port Germein is in lat. 32°59' S., long. 138°5' E., 9 miles N. of Port Pirie.

Exports.—Wheat and wool.

Accommodation.—Germein Bay has a good, safe, and commodious anchorage, with good holding ground in less than 40 ft. of water. It is the loading place for deep draught vessels from Port Pirie. There are two berths at the jetty, 500 ft. long at one side, with 22 ft. at low water; and at the other side, 300 ft. long with 20 ft. at low water. The channel leading to the jetty has 17 ft. at low water.

Port Charges.—**Tonnage Dues** :—1½d. per ton reg. **Towage, Pilotage,** and other expenses about half Port Pirie rates. **Water** :—10s. 6d. per 1,000 gallons.

PORT LINCOLN.

Port Lincoln, in Boston Bay, is 190 miles W. from Port Adelaide.

Population.—1,100.

Imports.—Coal and general merchandise.

Exports.—Wool, wheat, skins, barley, oats, and phosphate.

Accommodation.—The harbour is landlocked, and capable of accommodating any number of vessels of the largest size. There are two jetties, one which connects with the railway running into the back country, and which has only just been completed, and the other opposite the township, which has a depth at low water of 15 ft. at the outer end. The depth at the outer end of the new jetty is about 27 ft. Rise and fall of tide, 6 ft.

Port Charges.—**Berthing or Tonnage Dues** :—Sailing vessels, 3d. per ton net reg. Steamers, 1½d. per ton. **Wharfage** :—1s. 8d. per ton of 40 cubic ft., or per ton weight of 2,240 lb. **Light Dues** :—From or to any port beyond the Australasian Colonies, 3d. per ton, in and out.

PORT MACDONNELL.

Port Macdonnell is situated 324 miles S.E. from Adelaide, and 300 miles W. of Melbourne.

Population.—800.

Imports.—General merchandise, from Melbourne.

Exports.—Wool, barley, oats, potatoes, and ground bark.

South Australia—Port Macdonnell (*continued*).

Accommodation.—There is a depth of 23 ft. at high water, and 18 ft. at spring tides, at a distance of $1\frac{1}{4}$ miles from the jetty, where three sets of moorings are laid. The jetty is 600 ft. long, and has two sets of truck lines, for hand trucks. The loading and unloading is done by means of lighters under sail, carrying 10 tons each. In the event of all the mooring being occupied, vessels entering the bay must anchor, and should be ballasted and kept in trim, ready to seek an offing. Although the moorings are of the heaviest description, and capable of holding any vessel that can enter Macdonnell Bay, masters should bear in mind that during and directly after heavy S.W. gales, the sea rolls in over the outlying reefs, breaking heavily in the bay, and in 7 to 9 fathoms southward of the port. No vessel can be considered safe in bad weather from the westward if at her own anchors.

Pilotage.—Not compulsory.

Port Charges.—**Harbour Dues** :—On a vessel of 274 reg. tons, £2 per month or part of a month. **Mooring** :—£2 to £10, according to tonnage. **Wharfage** :—Average rate, 1s. 10d. per ton of 40 cubic ft. **Light Dues** :—3d. per ton inwards, and 3d. per ton coastwise. **Labour** :—1s. per hour overtime, 1s. 6d. per hour. **Ligherage** :—4s. 6d. per ton of 40 cubic ft.

PORT PIRIE.

Port Pirie is in lat. $33^{\circ}10'$ S., long. $138^{\circ}9'$ E., on the N.E. coast of Spencer Gulf.

Population.—11,000.

Imports.—Coal, coke, timber, railway iron, and manures.

Exports.—Zinc, lead, wheat, etc.

Accommodation.—The depth at low water at the outer anchorage is up to 40 ft.; spring tides rise 7 to 9 ft. Depth at wharves, 18 to 21 ft. at low water. There is 5,924 ft. of wharfage, all connected with railways. The channel from the sea to the harbour is 150 ft. wide at the narrowest part, and has a depth of 15 ft. at low water springs; from the entrance to the wharves in the town, and through the harbour, it is 250 ft. to 400 ft. wide. A depth of 20 ft. is also provided in a swinging berth, which is 600 ft. in width. Vessels of over 5,000 tons reg. have navigated this waterway during high water, with 20 ft. to 26 ft. in the channel. Large vessels continually navigate the river in safety, and take away heavy cargoes up to 6,000 tons, and drawing 21 ft. 6 in. There are three small slipways capable of taking vessels of 120 and 70 tons; and a wet dock (open) 350 ft. long 110 ft. wide, and 20 ft. deep.

There are hand cranes capable of lifting about 5 tons, and several steam winches for loading and discharging ballast at about 40 tons per hour.

Pilotage.—Compulsory. To or from Pirie wharves, from S. end of the eastern shoal, 100 tons, £3. Every ton above, 2d., with a maximum charge of £15 15s. **Harbour Pilotage** :—Compulsory. Vessels of 300 tons mooring, 7s. 6d.; removal, 7s. 6d.; unmooring, 5s. Vessels of 1,000 tons mooring, £1; removal, £1 5s.; unmooring, 12s. 6d. Vessels above 1,000 tons, mooring at wharf, £1 10s.; removal, £1 10s.; and unmooring, 15s. **Towage** :—Sailing vessels, 11d. per ton in and out. Steamers, £10, from anchorage to wharf.

Port Charges.—**Tonnage Dues** :—Steamers, $1\frac{1}{2}$ d. per ton. Sailing

South Australia—Port Pirie (continued).

vessels, 3*d.* per ton. **Wharfage** :—On ballast, 6*d.* per ton. **Light Dues** :—From or to foreign ports, 3*d.* per reg. ton. From or to inter-state ports, 1½*d.* per reg. ton, not exceeding 6*d.* per ton in any 6 months. **Entrance and Clearance** :—Usually £10 10*s.* for steamers, and £5 5*s.* for sailing vessels. **Ballast** :—About 3*s.* 6*d.* per ton. **Brokerage** :—5 per cent. **Lightering** :—3*s.* per ton. **Stevedoring** :—1*s.* in harbour, and 1*s.* 3*d.* at anchor.

Pro Forma Charges on a steamer of 2,742 tons reg., inward from inter-state, in ballast, with a cargo of concentrates out, drawing 25 ft. loaded :—

	£	s.	d.
Harbour dues (light) at 4½ <i>d.</i> per reg. ton	51	8	3
Brokerage at 5 per cent.	33	17	3
Pilotage, in and out, and removals	36	6	0
Towage, and removals	18	0	0
Income tax	5	10	0
Shipping bonds	60	0	0
Lightering at 3 <i>s.</i> per ton	136	0	0
Stevedoring	335	0	0
Entrance and clearance	10	10	0
Surveyor's fees	7	7	0
Tonnage dues	17	2	9
	<hr/>		
	£711	1	3

PORT VICTOR.

Victor Harbour, in Encounter Bay, on the southern coast of S. Australia, is in lat. 35°35' S., long. 138°36' E., about 3 miles to the N.E. of Rosetta Head.

Imports.—Fencing wire, timber, coal, potatoes, groceries, ironmongery, and general goods.

Exports.—Wool, bark, wheat, flour, hides, tallow, and honey.

Accommodation.—The entrance between Point Douglas and Port Elliot is unobstructed by rocks or shoals, and free from all dangers, having a depth of water from 8 to 10 fathoms, with plenty of room to beat in or out. The anchorage is not good, as patches of rocky bottom exist in many places, but heavy moorings have been laid down, and a breakwater 1,000 ft. long has been constructed at the N.E. corner of Granite Island, pointing in an E.N.E. direction, affording good and ample protection for vessels at the moorings against prevailing weather. There is a breakwater and jetty, provided with cranes and steam hoists, and a new jetty 298 ft. long, with 25½ ft. water at low tide. Tide rises and falls 4 ft. 8 in. The outer berth has 36 ft., middle 30 ft., and inner berth 24 ft. at ordinary low water springs.

Pilotage.—Not compulsory. Vessels of 100 to 200 tons, £2 in, and the same out. Every ton above 200, ½*d.* per ton in, and the same out. A rebate of one-fourth allowed to steamers.

Port Charges.—**Light Dues** :—1½*d.* in, and 1½*d.* out, net tonnage. Vessels calling for orders and not discharging, half the above rates. If calling at another port in the State, ½*d.* extra. If calling at the State within six months of first visit, 6*d.* per net ton covers all light dues at any number of ports. **Mooring Dues** :—Vessels of 100 to 300 tons, £2; 300 tons and over, £3 3*s.* **Harbour Pilotage** :—Mooring, 30*s.*; unmooring, 30*s.* **Wharfage** :—1*s.* 8*d.* per ton, general cargo. **Ballast** :—Sand, about 2*s.* per ton. **Labour** :—1*s.* per hour ordinary time; 1*s.* 6*d.* per hour overtime. **Shunting** :—On railway jetty, 9*d.* per ton.

South Australia—Port Victor (*continued*).**Pro Forma Charges** on a sailing ship of 1,038 tons reg. :—

	£	s.	d.
Light dues, in and out	12	19	6
Mooring dues	3	3	0
Pilotage, in- and out	7	9	10
Harbour pilotage (mooring and unmooring)	3	0	0
	£26	12	4

Pro Forma Charges on a steamer of 4,308 tons net reg. :—

	£	s.	d.	£	s.	d.
Pilotage in, 1st 200 tons	2	0	0			
„ „ 4,108 at $\frac{1}{2}d.$	8	11	2			
Less 25 per cent. for steam	2	12	9 $\frac{1}{2}$			
				7	18	4 $\frac{1}{2}$
Pilotage outwards				7	18	4 $\frac{1}{2}$
Mooring dues				3	3	0
Harbour pilotage, inwards				1	10	0
„ „ outwards				1	10	0
Light dues				53	17	0
Entrance and clearance fees, and agency				5	5	0
Overtime, labour, 40 men 1 hr. each at 6d.				1	0	0
Telegrams, postage, etc.				0	7	6
Overtime, shunting down jetty, 2 hrs. at 5s.				0	10	0
				£82	19	3

PORT WAKEFIELD.

Port Wakefield, in lat. 34°10' S., long. 138°10' E., is situated at the head of the Gulf of St. Vincent.

Population.—About 700.

Imports.—General stores, fencing, and building materials.

Exports.—Wheat, wool, and firewood.

Accommodation.—This port cannot be entered by large vessels, and they generally anchor in about 4 $\frac{1}{2}$ fathoms of water, about 6 miles from the wharf, loading and discharging with small boats. There is a depth of 10 ft. at high water, and 1 ft. at low water, whilst at lowest spring tides there is a dry bottom (composed of sand and mud). Firewood may be obtained, and also water of inferior quality.

Pilotage.—Nil.

Port Charges.—**Light Dues** :—6d. per ton on ocean-going vessels.

Wharfage :—From 10d. to 1s. 8d. according to the class of goods. **Labour** :—1s. per hour.

For other expenses, see **Port Adelaide**.

WALLAROO.

Wallaroo, in lat. 33°55' S., long. 137°42' E., is situated on Spencer Gulf.

Population.—About 4,000.

Imports.—Coal, coke, timber, ore, phosphates, and railway iron.

Exports.—Wheat, copper, and flour.

Accommodation.—Vessels of any draught up to about 25 ft. 6 in. can ride in the bay with perfect safety, bad W. weather increasing the depth. The holding ground is good. A fine new Government jetty has been erected about 2,000 ft. S.W. of the old one, having eight berths for vessels, with a depth at low water springs varying from 11 ft. to 24 ft. The jetty is 2,100 ft.

South Australia—Wallaroo (continued).

long, from the sea end of which there is a red fixed light, which is visible at night for a distance of 4 miles, the greatest brilliancy on a bearing from the light W.N.W., which is the deepest water course into the bay. By working the tides during the last 24 hours of working a vessel can load down to 25 ft. 6 in., but must move from the jetty into the deep water of the bay. There are four Government hydraulic hoists on the wharf for discharging cargo, the lifting capacity being 10 to 12 cwt. each. The old jetty is not in use.

Pilotage.—Harbour pilotage, compulsory within 1 mile of the jetty. Vessels up to 500 tons, £2 in, and the same out. From 501 to 1,000 tons, £3 in or out. From 1,000 tons upwards, £4 in or out. **Removals :—**Maximum, £1 10s. **Sea Pilotage :—**Not compulsory. Vessels up to 100 tons, £3 in or out. From 100 to 200 tons, £4 in or out, and for every ton above 200 tons, 1d. per ton, in or out. Overtime, harbour pilot, before 6 a.m. and after 6 p.m., 3s. per hour.

Port Charges.—**Entrance :—**£2 10s. **Clearance :—**£2 10s. **Tonnage Dues :—**Sailing vessels : 3d. per reg. ton. Steamers : 1½d. per ton. **Light Dues :—**From or to ports beyond the Commonwealth, 3d. per ton in, and the same out. If to and from an inter-state port, 1½d. in and the same out. Vessels in ballast, calling for orders only, and not discharging cargo or passengers, are exempt from light dues. **Mooring :—**Vessels mooring at Government moorings, under 200 tons net reg., free ; 201 to 500 tons, £1 ; 501 to 1,000, £1 10s. ; over 1,000 tons, £2. **Ballast :—**From ship to railway dump, including rail charges, 2s. 6d. and 2s. 9d. per ton. From dump to ship, 4s. 3d. per ton. Ballast can be discharged five miles W. of the new jetty, in 12 fathoms. **Water :—**Water from the Beetaloo Reservoir can be procured at 6s. per 1,000 gallons, alongside.

Income Tax :—All steam and sailing vessels every voyage with cargo from South Australia to any place out of South Australia to pay 4½d. in the £, on 5 per cent. of gross freight and passage money ; if amount taxable should exceed £800, vessels would have to pay 7½d. in the £ on 5 per cent. of gross freight and passage money.

Customs Overtime :—Clearance overtime fee, 5s. per ship after 4.30 p.m. and before 9 a.m., with an additional charge of 2s. per hour between 4.30 p.m. and 10 p.m., 3s. between 10 p.m. and 6 a.m., and 2s. between 6 a.m. and 9 a.m.

Stevedore :—Loading wheat into sailing vessel, 1s. 5d. per ton ; wheat into steamers, 1s. 6d. per ton ; coke, 2s. 6d. per ton ; ballast, 2s. 6d. per ton from ship to ballast dump, including wharfage, shuntage, and discharging of trucks ; timber, 3s. 6d. per 1,000 ft.

Pro Forma Charges on a steamer of 1,000 tons net reg., from the United States, discharging ballast, and loading 2,000 tons of wheat :—

	£	s.	d.
Light dues, inwards	12	10	0
„ „ outwards	12	10	0
Tonnage dues	6	5	0
Pilotage inwards	3	0	0
„ outwards	3	0	0
Removal in harbour	1	10	0
Moorings	1	10	0
Income tax	1	17	6
Customs overtime	1	2	0
Stevedore, 2,000 tons wheat at 1s. 6d. per ton	150	0	0
„ discharging 400 tons ballast at 2s. 6d. per ton	50	0	0
Water, 2,000 gals.	0	12	0
Entrance and clearance	5	0	0

TASMANIA.

Tasmania, the smallest of the States constituting the Australian Commonwealth, is an island separated from Victoria by Bass Strait, and lying between latitudes 40° and 44° S., and longitudes 145° and 149° E. It has an area of 26,215 square miles, with a population of 184,008. The State Government also exercises jurisdiction over the islands of the Ferneaux Group, situated in the Bass Strait; the Hunter Group, situated to the N.W. of Tasmania; King Island, about midway between Tasmania and Victoria; Maria Island on the E. coast; Bruni Island, forming the E. shore of D'Entrecasteaux Channel; Schouten Island, off little Swanport; and the Macquarie Group, in the South Pacific Ocean.

Light Dues.—The only state charge on vessels visiting Tasmanian ports is that connected with the administration of the lighthouses guarding the coast. These dues are fixed for all vessels at 3*d.* per ton, with a maximum of £25 at any one port, and a further proviso that the total payment in any period of six months shall not exceed in the aggregate the sum of £150, notwithstanding the tonnage of such ship. When a vessel has paid light dues at any one port in Tasmania, she is permitted to take the whole or any part of her original cargo to any other port in Tasmania without further charge for light dues. Every coasting trade vessel is charged 3*d.* per ton, a permit being granted them to enter any port in Tasmania free of lighthouse rates for a period of six months, on payment of 1*s.* per ton. Vessels in ballast pay half only of these lighthouse dues.

The regulations provide that the term "vessels in ballast" shall mean all vessels arriving and sailing in ballast, or which do not break bulk, or only to such an extent as may be necessary to provide funds for the repairing, re-fitting, or refreshment required by such vessels, or to allow such repairing to be effected, but shall not include any vessel which arrives for the purpose of landing or embarking, or which actually lands or embarks, any passenger for whose passage the master or owner has received, or is to receive, any pecuniary payment; or any vessel which arrives for the purpose of being exhibited, or which contains anything on board to be exhibited for which exhibition the master or owner is to receive any pecuniary reward.

DEVONPORT.

Devonport, in lat. $41^{\circ}7'$ S., long. $146^{\circ}23'$ E., is situated on the river Mersey, and is the principal outlet for the N.W. coast of Tasmania.

Population.—4,500.

Imports.—General merchandise.

Exports.—Potatoes, wheat, oats, peas, etc.

Accommodation.—This harbour is near the mouth of the river, and affords well-sheltered anchorage on sand and gravel in smooth water. The area of the harbour is considerable, and vessels of 450 ft. have room to swing. The entrance between the east mole and western shore has a width of 150 ft. at low water springs, and 16 ft. depth, which is maintained up to the wharves; spring range, 10 ft.; neap, 8 ft. A railway runs on to the

Tasmania—Devonport (*continued*).

western wharves (situated about a mile from the bar), which are 1,200 ft. long, with 800 ft. of shed accommodation; depth alongside, low water spring tides, 17 ft. Vessels discharge alongside, using their own appliances. There is one crane to lift 5 tons.

Time Signals.—A ball is dropped near the post office at 1 p.m. Tasmania mean time, or 10 h. fast of Greenwich mean time, equal to 0 h. 45 m. 36 s. local mean time, and 15 h. Greenwich mean time.

Pilotage.—Compulsory. Sailing vessels—Inwards, 4*d.* per ton. Steamers—3*d.* per ton, but not exceeding £10 on any one occasion for any vessel. Outwards, the same charges, with a maximum of £5. Exempt masters may obtain the services of a pilot between sunrise and sunset for £2; after sunset, £3. Pilotage exemption fee, £3 3*s.*, together with an examination fee of 10*s.* 6*d.*

Port Charges.—**Light Dues.**—See **Tasmania.** **Wharfage:**—Inwards, 3*s.*; outwards, 1*s.* per ton. **Entrance and Clearance:**—£2 2*s.* **Labour:**—1*s.* per hour. **Brokerage:**—5 per cent. **Ballast:**—Shingle can be had for the carting. **Harbour Dues:**—2*d.* per ton reg.

Water, wood, and coal can also be obtained.

HOBART.

Hobart, in lat. 42°50' S., long. 147°19' E., is situated about 11 miles from the mouth of the river Derwent.

Population.—40,450.

Exports.—Lumber, bark, fruits, wool, and minerals.

Accommodation.—The river up to the town is free from dangers, and averages about 2½ miles in width. There is no bar. There is generally 10 to 12 fathoms of water within half a mile of the banks, and at least 3 fathoms a quarter of a mile from either shore. At the east side of the entrance the Derwent lighthouse is erected; it is a square tower 40 ft. high, painted white, and exhibiting a fixed white light visible 10 or 12 miles. The anchorage is good anywhere off the town, in 9 to 12 fathoms, on soft mud. The wharves and accommodation for shipping are excellent, and vessels of the largest size can lie alongside the piers. There are 4,467 ft. of available quay and wharfage, including the piers, with low water depth alongside up to 44 ft. The Constitution open dock and Victoria open dock contain a further 2,452 ft. of quayage, at which vessels can load up to 10½ and 12 ft. There is a steam travelling crane on Dunn Street Pier to lift 25 tons, and a stationary crane in Constitution dock to lift 8 tons.

There is a patent slip with cradle 219 ft. long, 13 ft. forward and 24 ft. aft, on the blocks, also four smaller slips. Small repairs can be executed. These slips are out of repair.

Time Signals.—Chronometers can be checked. A ball is hoisted half-way up a flagstaff on the site of Fort Mulgrave, 10 minutes before the signal, right up 5 minutes before, and dropped at 1 h. 0 m. 0 s. p.m. standard time of Tasmania, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 0 h. 49 m. 20 s. local mean time. A gun is also fired from the Queen's Battery. This signal is unreliable.

Pilotage.—Compulsory for vessels over 50 tons. Inwards: Sailing vessels, 6*d.* per ton reg. Steamers, 4*d.* per ton reg. Maximum inward

Tasmania—Hobart (*continued*).

pilotage, £15. Minimum, £4. Outwards : Half the above rates. Maximum, £5. **Towage** :—By arrangement. About £1 10s.

Port Charges.— $\frac{1}{2}d.$ per ton on arrival ; with a maximum of £7 10s.

Wharfage Charges :— $1d.$ per ton each trip, with special rates for regular traders as follows : For every vessel under 50 tons reg., 16s. 8d. per month ; 50 tons and under 100 tons, £1 10s. ; 100 tons and under 150 tons, £2 3s. 4d. ; 150 tons and under 200 tons, £2 16s. 8d. ; 200 tons and upwards, £3 10s., and a further sum of 13s. 4d. for every 100 tons complete after the first 200 tons reg. **Light Dues** :—For steam and sailing vessels, 3d. per ton reg., payable on arrival. Maximum £25. The charge for any one vessel for six months not to exceed £150 in the aggregate. Vessels calling for coal, stores, etc., are liable for half of all charges. **Discharging** :—General cargo, 1s. 4d. per ton ; meat, 1s. 6d. per ton d.w., to or from wharves. **Ballast** :—1s. 6d. per ton, delivered alongside. **Provisions** :—Beef and mutton, 5d. per lb. ; potatoes, 5s. per cwt. ; flour, £11 per ton. **Water** :—Fresh water, 1s. 3d. per ton. **Coal** :—£1 2s. per ton.

Pro Forma Charges on a steamer of 10,000 tons reg., calling to discharge and load cargo :—

	£	s.	d.
Light dues (maximum)	25	0	0
Pilotage in and out (maximum)	20	0	0
Port charges (maximum)	7	10	0
Use of stage	0	10	0
Electric light on wharf	5	0	0
Use of wharf office	0	5	0
Customs duty on bonded stores consumed in port	5	0	0
„ overtime	5	0	0
Health officer (health certificate)	1	1	0
Stevedore, discharging 1,000 tons at 1s. 4d. per ton	66	13	4
„ „ 1,000 tons (weight) at 1s. 6d. per ton	75	0	0
„ loading 5,000 bales at 1s. per bale	250	0	0
„ „ 437½ tons apples between 8 a.m. and 5 p.m. at 1s. 9d. per ton measurement	38	5	8
Stevedore, loading 437½ tons apples between 5 p.m. and 8 a.m. at 2s. 3d. per ton measurement	49	4	5
Stevedore, loading 50,000 sup. ft. timber at 4s. per 1,000 (day time)	10	0	0
„ „ 50,000 sup. ft. timber at 6s. per 1,000 (night time)	15	0	0
Dunnage for apples	10	0	0
Tallying cargo inwards and outwards	50	0	0
Dumping 5,000 bales of wool at 2s. each	500	0	0
Labour on wharf, stacking cargo	20	0	0
Advertising, telegrams, and sundries	10	0	0
Entering and clearing at Customs	5	5	0
	£1,168	14	5

LAUNCESTON.

Launceston, at the head of the river Tamar, in lat. 41°23' S., long. 147°8' E., is about 40 miles distant from the sea. It is a free port.

Population.—18,000.

Imports.—Manufactured goods, tea, sugar, beer, wine, etc.

Exports.—Wool, oats, timber, potatoes, fruits, hops, tin, gold, and bark.

Accommodation.—The bar has been dredged away and vessels of 350 ft. in length and 22 ft. draught can berth at the wharves at high water. There is from 12 to 13 ft. in the berths at low water, over a soft bottom, and at Beauty Point Jetty, vessels drawing 23 ft. can lay alongside afloat at all

Tasmania—Launceston (continued).

times, and discharge cargo for the Beaconsfield Mines. There are about 3,298 ft. of wharfage. There is a good anchorage in from 5 to 8 fathoms at the west bank, to the S.E. of the N.W. buoy, and about 500 ft. N.E. of the line of the N.W. and Middle Bank Buoys, and from 1 to 1½ cables S.E. of the first-named buoy. Small vessels may anchor closer in, and to the N.W. of the buoy. The mouth of the river Tamar is two cables in width between the buoys on the Middle Ground and Yellow Rock, and gradually widens, till at Lagoon Bay it is half-a-mile to the 3 fathoms line from either bank. In the channel the depth ranges from 15 to 35 fathoms, and the bottom in most places is rocky, and not fit for anchorage. The best anchorage is in Lagoon Bay in 7 to 10 fathoms. There is a floating dock capable of receiving vessels 160 ft. long, 36 ft. beam, and 11 ft. draught. In Georgetown Cove, and other places on the banks of the river, vessels of considerable size may be safely placed upon the "hard" to be cleaned or examined.

Pilotage.—Compulsory. Sailing vessels—6*d.* per ton. Steamers—4*d.* per ton. Maximum, £15. The same charges outwards. Vessels not going above Georgetown pay one-third pilotage only. **Towage:**—To or from the Heads, for the first 100 tons, 1*s.* 4*d.* per ton; for every additional ton up to 300, 1*s.*; for every additional ton up to 500, 8*d.*; for every ton above 500, 4*d.* The pilotage of vessels towed by the tug will be charged at two-thirds of the rate for sailing vessels. When two vessels are towed together, a reduction of one-fifth of the usual charge to the smaller one will be made to each, subject to the above minimum.

Port Charges.—Vessels seeking freight, or putting in from stress of weather, and not breaking bulk, are exempt from all port charges, unless they employ a pilot, in which case, if they anchor below Georgetown, one-third pilotage only will be charged. **Harbour Dues:**—1*d.* per ton inwards, and 1*d.* per ton outwards. Vessels not going above Georgetown exempt. **Light Dues:**—Same as at Hobart, but not payable at both ports on the same trip. **Crane Charges:**—Use of crane, 2*s.* 6*d.* per hour, which includes the services of the man in charge. Steam winch, 4*s.* per hour. **Entrance and Clearance:**—£5 5*s.* **Ballast:**—Stone, 3*s.* 6*d.* per ton. Clay, 1*s.* 2*d.* to 1*s.* 9*d.* per ton.

Pro Forma Charges on a sailing vessel of 902 tons:—

	£	s.	d.
Light dues	11	5	6
Pilotage, in and out	30	0	0
Harbour dues	7	10	4
Towage, in and out	60	1	4
Steam winch, at 4 <i>s.</i> per hour, 32 hours	6	8	0
Discharging at 30 <i>s.</i> per day, 4 days	6	0	0
Fresh water	1	0	0
Noting protest	0	10	6
Tally clerk at 12 <i>s.</i> 6 <i>d.</i> per day, 4 days	2	10	0
Entrance and clearance	5	5	0
	£130	10	8

STANLEY HARBOUR.

Stanley Harbour, in lat. 40°42' S., long. 145°23' E., is 141 miles by steamer from Launceston.

Accommodation.—Stanley Harbour is a spacious bay with good

Tasmania—Stanley Harbour (*continued*).

holding ground, and sheltered from all winds except E., and has a depth of from 3 to 5 fathoms; bottom of sand and clay. The inner jetty is now surrounded by shoals, and is approached from the E. by a channel marked by beacons. There is shelter at this jetty from all winds, and accommodation for vessels drawing not more than 8 ft. of water. At the end of the jetty there is about 3 ft. at low water. Rise and fall of the tide is from 8 to 10 ft. About a quarter of a mile to the E. is a jetty where there is 18 ft. depth of water at lowest spring tides, and which is sheltered from all winds except E. During severe easterly gales, vessels can find shelter in West Bay, on the other side of the peninsula. A new breakwater and jetty have been in course of construction for some time.

Port Charges.—For **Light Dues**, see **Tasmania**.

STRAHAN.

Strahan is in lat. $42^{\circ}3'$ S., long. $145^{\circ}25'$ E.

Population.—About 1,500.

Accommodation.—The entrance to Macquarie Harbour is narrow, and has a depth of from 6 to 12 fathoms. There is a bar about three-quarters of a mile from the entrance, bottom of sand, and a depth of 16 ft. at low water spring tides. The sea breaks heavily in strong W. and N.W. winds, but in other winds the sea is smooth, and the bar is safe at high water for vessels up to 10 ft. draught. 12 miles of navigable channel (marked with beacons and buoys), between shallow sandbanks, lead to the harbour. The depth in the channel is from 2 to 7 fathoms at low water, spring tides. The harbour is 25 miles long, and 3 to 5 miles broad, and affords a depth of 8 to 20 fathoms. There is 1,000 ft. of quayage in the harbour, having a depth alongside of from 13 to 18 ft. at low water; rise and fall of tide, about 15 in. There is a crane to lift 20 tons.

Vessels up to 450 tons reg. can be towed by coasting steamers.

Kelly's Basin is situated 18 miles from Strahan, and 24 miles from the Heads. There is upwards of 600 ft. of quayage, with 12 to 20 ft. of water alongside.

Port Charges.—For **Light Dues**, see **Tasmania**.

ULVERSTONE.

Ulverstone, in lat. $41^{\circ}6'$ S., long. $146^{\circ}13'$ E., is situated on the river Leven, 14 miles from West Devonport.

Accommodation.—Ulverstone is a sea port, and is capable of accommodating vessels drawing up to 9 ft. This depth is about to be increased to 16 ft. 6 in.

Pilotage.—Steamers—*2d.* per ton each way. Sailing vessels—*3d.* per ton each way.

Port Charges.—For **Light Dues**, see **Tasmania**.

VICTORIA.

Victoria, the most southern of the States on the Australian mainland lies between latitudes 34° and 39° S., and longitudes 141° and 150° E. It has a coast line of about 500 miles in extent, opening on to the Pacific Ocean and Bass Strait. The area of Victoria is 87,884 square miles, with a population estimated on the basis of the census taken in 1901 of about $1\frac{1}{4}$ millions.

Tonnage and Light Dues.— $6d.$ per net reg. ton on all ships arriving in any port in Victoria, payable once every six months. Ships arriving in ballast pay $2d.$ per ton each visit, the maximum payment under this heading not to exceed $4d.$ per ton within any six months. No tonnage or light dues are payable on any ship arriving in distress, or putting in for the purpose of being docked, re-fitted, or repaired, or merely calling for orders, provisions, bunker coal, without discharging or taking on board any cargo or passengers, or if solely employed as a pleasure yacht, and not engaged in trade, or plying for hire.

GEELONG.

Geelong is in lat. $38^{\circ}6'$ S., long. $144^{\circ}18'$ E.

Population.—30,000.

Imports.—Timber, coal, flax, hemp, iron and steel, and general merchandise.

Exports.—Wool, wheat, leather, frozen meat, butter, compressed fodder, flour, and tallow.

Accommodation.—The harbour is approached by two channels cut through the bar, with the following depths at low water ordinary springs :—Old Channel, 9 ft. ; Hopetoun Channel, 23 ft. 6 in. The Hopetoun Channel is lighted at night with gas beacons at intervals on either side, those on the starboard being white, and those on the port hand red. Good anchorage is to be had in Corio Bay, which is nearly land-locked. The average rise of the tide is 1 ft. 9 in., and in summer, with prevailing E. winds, the tide falls 10 or 12 in. below low water given. Westerly winds give better tides at neap than full, and change with E. winds. The wharf frontage consists of Yarra Street Jetty, 1,620 ft. long ; Railway Jetty, 1,360 ft. ; and Customs House Jetty, depth of water alongside at low water 23 ft. The Freezing Works Jetty is 470 ft. long, with 28 to 30 ft. at outer end. One crane to lift 3 tons, and three cranes to lift 2 tons. Small repairs can be executed.

Pilotage.—Compulsory. Steamers— $2\frac{1}{4}d.$ per reg. ton up to 2,000 tons. Sailing vessels— $4d.$ per reg. ton, with a maximum charge of £34, and a minimum of £5. **Towage** :—Vessels of 400 tons and under, £15 each way. Over 400 tons, $6d.$ per reg. ton additional, with a discount of 5 per cent. if paid within 30 days.

Port Charges.—**Harbour Dues** :— $6d.$ per reg. ton inwards with cargo, and $4d.$ in ballast. **Entrance and Clearance** :—Generally £5 5s. **Wharfage** :—From 3s. to 5s. per ton. **Boat Hire** :—According to arrange-

Victoria.—Geelong (*continued*).

ment. **Ballast** :—About 3s. 6d. per ton, delivered alongside. **Labour** :—Stevedores work from 1s. 1d. to 1s. 3d. per ton. **Quayage** :— $\frac{1}{2}$ d. per reg. ton per day for the first week, and $\frac{1}{4}$ d. per ton after that period.

Pro Forma Charges on a steamer of 2,000 tons reg., with a cargo of timber in and ballast out, drawing 23 ft. loaded :—

	£	s.	d.
Harbour dues at 6d. per ton	50	0	0
Pilotage, in and out	37	10	0
Running lines	1	10	0
Quayage	38	10	0
Entrance and clearance	5	5	0
Commission on disbursements	12	10	0
	<hr/>		
	£145	5	0

MELBOURNE.

Melbourne is in lat. 37°45' S., long. 144°58' E., on the river Yarra, which falls into Hobson's Bay at the head of Port Philip. Distance from Liverpool by the Cape, 11,555 miles; by Suez Canal, 11,175.

Population.—538,000.

Imports.—General merchandise.

Exports.—Gold, wool, cereals, butter, frozen meat, hides, etc.

Accommodation.—Vessels drawing up to 24 ft. can ascend as far as Melbourne at low tides; above that draught, they discharge and load alongside the pier at Hobson's Bay, where there is good holding ground of soft mud. The depth in the bay is 3 to 5 fathoms. There are wharves, piers, and jetties, having a berthage length of 8 $\frac{1}{4}$ miles and a superficial area of nearly 46 acres, with an average depth of 24 ft. alongside. There are 46 transit sheds, measuring together about 2 $\frac{1}{4}$ miles, and having a floor area of slightly over 13 acres. Extensive repairs can be carried out.

There is a steam crane to lift 70 tons, one hydraulic crane to lift 15 tons, and six hand cranes to lift from 1 to 10 tons. 4 miles up the River Yarra a wet dock with an area of 90 acres has been excavated. This is known as Victoria Dock. It has 8,800 ft. of berthage accommodation, with a depth of 24 to 25 ft. at low water.

The following are the dimensions of the dry docks and slips :—

Dock or Slip.	Length over all in feet.	Width of Entrance at High Springs in feet.	Depth on Sill at High Springs in feet.	Lifting Power in tons.
Williamstown—				
Alfred Dock	470	80	27	—
New Floating Dock	216	36	13	—
Government Slip.	100	30 cradle	Forward 8 } on Aft 12 } blocks	400
Wright's Slip.	165			
Coal Co.'s Slip	66			
River Yarra—				
Duke's Dock	480	50	15 $\frac{1}{2}$	Can be divided into two parts 300 and 180 feet long.
Wright's Dock	330	46	17	—

Pilotage.—Compulsory for vessels over 100 gross reg. tons.

Victoria—Melbourne (continued).

Steamers—Up to 2,000 tons reg., $2\frac{1}{4}d.$ per ton. For every additional ton but not exceeding 7,400 tons, $\frac{1}{4}d.$ per ton. Sailing vessels— $4d.$ per ton, with a maximum of 2,040 tons.

	Rate per ton Net Register.	Maximum.	Minimum.
	<i>d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>
<i>Ships towed by Steam.</i>			
From one place to another in Hobson's Bay, or Corio Bay	$\frac{1}{2}$	2 10 0	1 0 0
From Hobson's Bay to Melbourne Wharves or vice versa.	$\frac{1}{2}$	2 10 0	1 5 0
From Footscray or Yarraville to Melbourne Wharves, or vice versa, or any intermediate distance	$\frac{1}{2}$	2 0 0	1 0 0
<i>Steamships.</i>			
From one place to another in Hobson's Bay	$\frac{1}{2}$	2 10 0	1 0 0
From one place to another in Corio Bay	$\frac{1}{2}$	2 10 0	1 0 0
From Hobson's Bay to Melbourne Wharves, or vice versa.	$\frac{1}{2}$	2 10 0	1 0 0
From Footscray or Yarraville to Melbourne Wharves, or vice versa, or any intermediate distance	$\frac{1}{2}$	2 0 0	1 0 0
<i>Ships propelled by Sails or Warped.</i>			
From one berth or place to another in Hobson's Bay or Corio Bay	$\frac{1}{2}$	2 10 0	1 0 0
NOTE.—If removal be effected by <i>sails</i> , the services of a licensed Pilot to be compulsory; if removal be effected by means of <i>warps only</i> , the services of a licensed Pilot shall be optional, but if engaged, the prescribed rates shall be payable.			
SPECIAL RATE.			
<i>Steam and Sailing Ships and Ships towed by Steam.</i>			
From Port Melbourne or Williamstown piers into any dock or to any slip in Hobson's Bay, or vice versa	$\frac{1}{2}$	2 10 0	0 15 0
From Port Melbourne or Williamstown piers to the Swinging buoys in Hobson's Bay for adjustment of compasses, or vice versa	$\frac{1}{2}$	2 10 0	0 15 0

Towage :—River Tows.—Sailing vessels and steamers not using their own steam. Up and down the River Yarra from Hobson's Bay only.

800 tons and under	6d. per ton.
For every ton over 800 tons up to 2,000	4d. „
Every ton over 2,000 tons	2d. „

To and from docks or slips, a rebate of 25 per cent. allowed on foregoing rates. Removals in river, $1d.$ per ton, providing vessel tows up and down river, and to sea, by one of Company's tugs. For steamships using their own engines the charge will be as follows, each attendance :—For first 2,000 tons net reg. or under, £8 8s.; over 2,000 to 2,500, £9 9s.; over 2,500 to 3,000, £10 10s.; over 3,000, £12 12s. If a second boat is required, an additional charge will be made of £5 5s. each attendance.

Bay Tows.—Removal, berthing, mooring, or off from pier. Sailing vessels and steamers not using their own steam :—

2,000 tons and under	2d. per ton.
For every ton over 2,000 tons	1d. „

When vessel tows to sea with one of Company's tugs the rate for every removal after first will be reduced one-half. Vessels going alongside a pier, and only towed by Company's tugs one way, will be charged rate and one-half. If a second boat required, the additional charge will be £5 5s. Steamships using their own engines up to 1,000 tons net reg., £5 5s.; and for every additional 500 tons, or part thereof, 21s. To or from docks or slips a rebate of 25 per cent. allowed off full rates, but in no case less than $1d.$ per ton.

Victoria—Melbourne (*continued*).

Sea and Geelong Towages.—To or from anchorage, Hobson's Bay :—

Vessels, 400 tons and under	via West Channel, £15.
Every "additional ton"	via South Channel, £17 10s.
	6d.

From Hobson's Bay to Geelong, and from Geelong to sea, or vice versa South Channel rate will be charged. Intermediate distances as per agreement. Upon all vessels cleared out "in ballast only" a reduction of one-fifth on the full rate will be made. In the case of a vessel not being ready at the appointed time, an extra charge of £3 3s. will be made for such attendance.

Port Charges.—**Light Dues** :—6*d.* per ton, once in six months. Vessels in ballast, 2*d.* per ton per trip, but not to exceed 4*d.* per ton within any six months. Vessels calling for orders or in distress are free. **Quayage Rates** :—One twenty-fourth of a halfpenny per net reg. ton for each of the first 144 hours, and one twenty-fourth of a farthing for each hour over the first 144 hours. Minimum charge, one halfpenny per ton. **Wharfage** :—According to tariff. **Clearance Fees** :—From 10 to 20 guineas. **Boat Hire** :—15s. per day. **Labour** :—11*d.* per ton. **Ship Surveyor** :—£3 3s. **Water** :—3s. per 1,000 gallons.

Pro Forma Charges on a steamer of 3,313 tons reg., with a cargo of 3,962 tons, drawing 21 ft. loaded :—

	£	s.	d.
Quayage dues (3 days 16 hours)	25	6	0
Pilotage, in and out	41	2	10
Towage	17	19	2
Boat hire	2	15	0
Light dues	82	16	6
Stevedoring	181	11	10
Tally clerks	0	12	6
Ship surveyor	3	3	0
Water, 4,000 gallons	0	12	0

£355 18 10

PORT FAIRY.

Port Fairy, late Belfast, is in lat. 38°16' S., long. 142°16' E.

Population.—3,600.

Imports.—Spirits, tobacco, and general merchandise.

Exports.—Wool, tallow, potatoes, grain, and onions.

Accommodation.—The anchorage for large vessels is in 5 to 6 fathoms, near the outer mooring buoy. Vessels trading here generally pick up an anchorage in about 15 ft. of water between the black buoy and the jetty. Vessels sheltering during a south-westerly gale may get as close in as their draught of water will permit. The anchorage is bad with easterly winds, and vessels should not try to ride out a S.E. gale, except as a matter of necessity, and then all precautions should be taken, and springs placed on the cable. Moyne River flows into Port Fairy, and vessels drawing 10 ft. of water can now navigate this river up to the wharves. Water and ordinary ships' stores plentiful.

Pilotage.—Sailing vessels and steamers—Under sail only, 6*d.* per ton. Maximum, £40; minimum, £4. Steamers and sailing vessels towed by steam, 4*d.* per ton. Maximum, £40; minimum, £4.

Victoria—Port Fairy (*continued*).

Port Charges.—Tonnage Dues :—See **Victoria. Stevedoring :—**

At the wharves, 1s. 6d. per ton for general cargo. **Labour :—**On board, 1s. 6d. per hour. **Quay Dues :—**For use of the Government Wharf, the charge is the same as at Melbourne.

PORTLAND.

Portland is in lat. 38°19' S., long. 141°39' E.

Population.—2,146.

Exports.—Wool, bark, meat, and grain.

Accommodation.—There is good anchorage in the depth of the bay off the town, sheltered from all but S.E. gales, which seldom occur. The holding ground is good. Near the centre of the bay is a jetty which runs out 1,300 ft. into 15 ft. 6 in. of water, with berthing accommodation for three vessels of 13 ft. draught. The best anchorage is in 6 to 7 fathoms at the outer end of the jetty, bearing W. by S., keeping the green light open. Portland Deepwater Pier, 700 ft. N. of the old jetty, projects E. by N., 4 cables from the shore, into 31 ft. of water. This pier at its outer end is 40 ft. wide for a length of 450 ft., with a least depth of 29 ft. at low water. The outer end of the pier projects 800 ft. across the sector of red light shown from the old jetty. The tide is entirely dependent on the winds.

Pilotage.—Steamers—1½d. per net reg. ton. Maximum, £14; minimum, 30s. in or out of port. Sailing vessels—2½d. per net reg. ton. Maximum, £10; minimum, £2, in or out of port. Pilotage is compulsory.

Port Charges.—Tonnage Dues :—6d. per ton, once in every six months. **Ballast :—**Sand, 2s. 6d. per ton at the pier. **Water :—**3s. per ton at the pier. **Mooring :—**Ocean going steamers £10. Other charges are the same as at Melbourne.

PORT PHILLIP.

Port Phillip is in lat. 38°7' S., long. 144°45' E.

Accommodation.—Port Phillip Bay is 40 miles long, and nearly as broad, having an area of 900 square miles. The entrance between the heads is 2 miles across. This bay contains two large harbours, Hobson's Bay and Corio Bay, the outports respectively of Melbourne and Geelong. The least depth of water in the fairway channel to Port Phillip is 27 ft. Extensive repairs are undertaken.

Time Signals.—A ball is dropped from a staff on the old lighthouse at Gillibrand Point, Williamstown, at 1 h. 0 m. 0 s. p.m. standard time of Victoria, equal to 15 h. 0 m. 0 s. Greenwich mean time, and 0 h. 39 m. 39.1 s. local mean time. Signals are also made at Geelong Telegraph Office and at the Signal Station, Queenscliff.

Pilotage.—Compulsory. Inward and outward (on net reg. tonnage).—From without Port Phillip Heads to an anchorage or pier in Hobson's Bay or Corio Bay, or vice versa : Ships propelled by sails only, 4d. per ton. Minimum £5, maximum £34. Ships towed by steam, above rate, less rebate of 1½d. per ton. Maximum £9. From sea inward through Port Phillip Heads, or vice versa, rebate 1d. per ton. Maximum £7 4s. Through any natural channel immediately between Port Phillip Heads and Hobson's Bay, rebate of ¼d. per ton. Maximum £1 16s.

Victoria—Port Phillip (*continued*).

Steamships: Up to 2,000 tons, $2\frac{1}{4}d.$ per ton. For every additional ton exceeding 2,000 tons and not exceeding 7,400 tons, $\frac{1}{3}d.$ per ton. Minimum £2 10s., maximum £26 5s. Vessels "seeking," calling "for orders," or in distress, $1d.$ per ton. Sailers—Minimum £5, maximum £10. Towed by steam—Minimum £3, maximum £10. Steamships—Minimum £2 10s., maximum £10.

NOTE.—If any such vessel subsequently discharges or loads cargo, or lands or takes on board passengers by way of earning freight, etc., full rates to apply both inward and outward. From an anchorage or pier in Hobson's Bay to an anchorage or pier in Corio Bay, or vice versa: Ships towed by steam, $2d.$ per ton. Minimum £4, maximum £10. Steamships $2d.$ per ton. Minimum £2 10s., maximum £10. Ships forced back within 48 hours after first departure liable to pay one-half rates additional for services subsequent to first sailing.

Port Charges.—See **Victoria**.

WARRNAMBOOL.

Warrnambool harbour, in lat. $38^{\circ}19'$ S., long. $142^{\circ}32'$ E., is on the W. side of Lady Bay, about 14 miles E. of Port Fairy.

Population.—6,600.

Imports.—General merchandise.

Exports.—Wool, skins, tallow, grain, potatoes, and dairy produce.

Accommodation.—The harbour is small, and only capable of accommodating vessels of small tonnage. There is a depth of 18 ft. at high water, 15 ft. at ordinary low water, and 14 ft. at lowest tide. The outer anchorage has a depth of $3\frac{1}{2}$ to 4 fathoms, but the best anchorage is in about 15 ft. of water, under the breakwater. There is a bar to the S.E., with $3\frac{1}{2}$ to 5 fathoms of water. The jetty is not now used, this part of the bay having in a great measure silted up. There are no moorings, but three buoys have been placed abreast of the breakwater, which is nearly 1,000 ft. long, with about 800 ft. berthing space.

Pilotage.—Compulsory. Steamers— $1\frac{1}{2}d.$ per ton, with a maximum charge of £7, and a minimum charge of £1 10s. Sailing vessels— $2\frac{1}{2}d.$ per ton, with a maximum charge of £10, and a minimum charge of £2. **Towage**—According to agreement.

Port Charges.—**Tonnage Dues**:— $6d.$ per ton. **Boat Hire**:— $5s.$ per hour. **Ballast**:— $2s. 6d.$ per ton for sand. **Labour**:— $9d.$ to $1s.$ per ton

Pro Forma Charges on a steamer of 716 tons reg., with a cargo of timber in, and ballast out, drawing 16 ft. loaded:—

	£	s.	d.
Tonnage dues	17	18	0
Pilotage, inwards	4	9	6
" outwards	4	9	6
Boat hire, 2 days	4	0	0
Labour, discharging 1,432 tons	71	12	0
	<hr/>		
	£102	9	0
	<hr/>		

WESTERN AUSTRALIA.

Western Australia includes all that portion of the Australian continent situated to the W. of 129° E. longitude, together with the adjacent islands in the Indian and Southern Oceans. It has a total area of 975,920 square miles, with a population, on November 30, 1907, of 261,563.

Tonnage Dues.—Over-sea vessels arriving with cargo beyond one-quarter of their net registered tonnage, 3*d.* per ton; clearing for over-sea ports with cargo of one-quarter their net registered tonnage, 3*d.* per ton. Vessels arriving or clearing with cargo less than one-quarter of their net registered tonnage, 3*d.* per ton on all cargo landed or shipped. Vessels calling at any port in this State (other than the port of Fremantle), for coal or supplies, and not broaching or shipping cargo or landing or embarking passengers, pay a fixed sum of £5 to cover all port charges. Vessels calling at such ports may, however, land and embark passengers not exceeding ten in number on payment of a fixed sum of £10 to cover all port charges. Vessels arriving in ballast are exempt from the payment of inward tonnage dues, but are charged outward on all cargo shipped.

Vessels, not being inter-state or coasting, loading part cargo at any port in the state, and going to other ports within the state to complete their loading for ports beyond the seas, pay tonnage dues at the rate of 4*d.* per ton on the cargo loaded at each port, but the maximum charge at each of such ports shall not exceed the sum of £10 for sailing vessels and £20 for steamships.

Light Dues.—2*d.* per ton inwards, and 2*d.* per ton outwards. Vessels calling at the port of Fremantle for coal or supplies and not broaching or shipping cargo and landing and embarking passengers, pay the sum of £5 in payment of light dues only.

All vessels arriving from beyond seas at any port in the State, and landing or shipping cargo less in extent than one-fourth of their net registered tonnage, or landing or embarking passengers exceeding ten in number, shall pay light dues at the rate of 1*d.* per ton on their net registered tonnage; such payment to cover both inwards and outwards working.

The master of any vessel who has paid full light dues at any port in Western Australia, and who may desire to visit other ports in the State for purpose of loading or unloading thereat, may obtain from the Chief Harbour Master at the port where he shall have so paid such light dues as aforesaid a certificate to that effect, and such certificate shall free him from payment of light dues at any other port in Western Australia for a period of three months from the date thereof; and in the event of such vessel leaving the State, and returning within the period of two months, and loading not more than one-quarter her net registered tonnage, such certificate shall also free the said vessel from payment of light dues as above.

Berthage Dues.—Vessels making use of sea jetties for landing or shipping cargo pay berthage dues at the following rates:—For the first week, or any part of two weeks, Sundays included, 1*d.* per ton on all cargo so landed or shipped. For each subsequent week or part thereof, 1½*d.* per ton on all cargo landed or shipped. Minimum charge, 10*s.*; maximum, £12.

Western Australia.

Vessels lying alongside any of the sea-jetties and transshipping cargo to or from lighters or other vessels pay 1*d.* per ton berthage dues on all such cargo.

Inter-state Steamers.—"Inter-state steamer" means any steamer trading exclusively between any Australian State, or New Zealand, and Western Australia, and includes any steamer trading between Singapore as a terminal port and Western Australia via the North-West ports, if such vessel is registered in any of the Australian States or New Zealand. Inter-state steamers pay, in lieu of the ordinary scale of port dues prescribed for foreign-going vessels, a fixed sum of 3*d.* per ton on their net registered tonnage, per entry into the State, provided they do not extend their trip to Fremantle; such payment to cover tonnage and light dues. Inter-state steamers bound to Fremantle will not pay port dues at any port called at *en route*, but upon each entry at the port of Fremantle will pay the following dues:—

Fremantle direct—1*d.* per ton on their net registered tonnage.
Fremantle *via* W. A. Ports—1½*d.* per ton on their net registered tonnage.

Inter-state steamers extending their trips to Bunbury or Geraldton, and returning to the Port of Fremantle, pay one-third of a penny per ton on their net registered tonnage extra per trip. Any such vessel making either of the above mentioned trips, and not returning to the Port of Fremantle, will pay 1*d.* per ton on their net registered tonnage extra per trip. Any vessel making an intermediate trip or trips on the coast between the Port of Fremantle and the North-West Cape, or between Fremantle and Eucla will pay ½*d.* per ton on their net registered tonnage per trip; or between Fremantle and any port north of the North-West Cape, 2*d.* per ton on their net registered tonnage per trip; provided always that such vessel shall return to the Port of Fremantle, at which port such dues shall be made payable. Any vessel making an intermediate trip or trips on the coast, and not returning to the Port of Fremantle, will pay the following dues:—

(1)	Fremantle to N.W. Cape	1½ <i>d.</i>
(2)	" " Eucla	1½ <i>d.</i>
(3)	" " Ports north of N. W. Cape	3 <i>d.</i>
	per ton on their net registered tonnage per trip.	

Any vessel making a coastal trip or trips not provided for in these regulations, and returning to the Port of Fremantle, will pay one-third of a penny per ton; or any vessel making such trips, and not returning to the Port of Fremantle, 1*d.* per ton on their net registered tonnage per trip. Inter-state steamers calling at any Western Australian port or ports *en route* to the Port of Fremantle, or on their return trip, will pay upon each entry into the Port of Fremantle a fixed sum of 1½*d.* per ton on their net registered tonnage; such sum to also cover light and tonnage dues at the port or port called at as aforesaid, and shall be made payable at Fremantle.

ALBANY.

Albany, in lat. 35°0' S., long. 117°45' E., is situated on the N. side of Princess Royal Harbour, King George's Sound.

Population.—About 3,000.

Imports.—General merchandise and coal.

Exports.—Wool, timber, sandal-wood, pearl shells, kangaroo and sheep skins, mallet bark, hides, gold, horses, etc.

Western Australia—Albany (continued).

Accommodation.—Albany is one of the finest natural harbours in W. Australia, and has an entrance a quarter of a mile wide, the channel being dredged to a depth of 30 ft. at low water for a width of 400 ft. The harbour is $4\frac{1}{2}$ miles long and 2 miles wide; the S. and W. sides are shallow. A supply of coal can always be obtained, and ships can be re-fitted. There are two jetties in Princess Royal Harbour for the berthing and discharging of vessels: (1) The Great Southern Railway jetty, with 1,350 ft. of berthing accommodation, with a depth of water from 12 to 32 ft., and supplied with four lines of rails, three cranes, viz., one hand crane, one 3-ton steam crane, and one 5-ton steam winch. Fresh water pipes are laid down on both sides of the jetty, from which a constant supply of good water can be obtained. Coir springs are supplied for the use of sailing vessels. Vessels can work in all weathers, and receive a quick dispatch at this jetty. (2) Another jetty exists, which is well adapted for vessels drawing not more than 23 ft. of water. This jetty is nearer the town than the Great Southern Railway jetty. Any repairs to marine engines and boilers, etc., can be executed promptly and at a reasonable cost, at the workshops situated at Albany, which are on a very extensive scale and fitted up with all the latest improvements. There is a line of railway from the Great Southern Railway jetty to Beverley, a distance of 243 miles, where it connects with the eastern line, thus making direct communication between Albany and the capital.

Pilotage.—Compulsory for over-sea ships. Into King George's Sound from the sea, and vice versa :—

	£	s.	d.		£	s.	d.
Under 10 ft.	2	0	0	16 ft. and under 17 ft.	3	15	0
10 ft. and under 11 ft.	2	4	0	17 ft. „ 18 ft.	4	0	0
11 ft. „ 12 ft.	2	8	0	18 ft. „ 19 ft.	4	5	0
12 ft. „ 13 ft.	2	15	0	19 ft. „ 20 ft.	4	10	0
13 ft. „ 14 ft.	3	0	0	20 ft. „ 21 ft.	4	15	0
14 ft. „ 15 ft.	3	5	0	21 ft. and upwards	5	0	0
15 ft. „ 16 ft.	3	10	0				

Into Princess Royal Harbour, including the navigation of the Sound, and vice versa :—

	£	s.	d.		£	s.	d.
Under 8 ft.	2	0	0	15 ft. and under 16 ft.	4	0	0
8 ft. and under 9 ft.	2	5	0	16 ft. „ 17 ft.	4	5	0
9 ft. „ 10 ft.	2	10	0	17 ft. „ 18 ft.	4	10	0
10 ft. „ 11 ft.	2	15	0	18 ft. „ 19 ft.	4	15	0
11 ft. „ 12 ft.	3	0	0	19 ft. „ 20 ft.	5	12	0
12 ft. „ 13 ft.	3	5	0	20 ft. „ 21 ft.	5	18	0
13 ft. „ 14 ft.	3	10	0	21 ft. and upwards	6	6	0
14 ft. „ 15 ft.	3	15	0				

Towage :—£3 inside Princess Royal Harbour. Towing in from St. George's Sound to Princess Royal Harbour, or vice versa, £5.

Port Charges.—**Tonnage and Light Dues** :—See **Western Australia.**

Berthage Dues :—1d. per ton of cargo loaded or discharged, with a maximum of £12. **Entrance and Clearance** :—As arranged with agents, from £2 2s. to £3 3s. **Labour** :—From 1s. 3d. to 2s. per hour. **Brokerage** :—As arranged, generally 5 per cent. **Launch Hire** :—£2 2s. to £5 5s.

Vessels in distress calling for supplies or water, or for orders, repairs, etc., only pay light dues in and out.

Western Australia—Albany (*continued*).

Pro Forma Charges on a steamer of 8,000 net reg. tons, with 12,000 tons of general cargo in, and ballast out, drawing 32 ft. loaded :—

	£	s.	d.
Light dues at 4 <i>d.</i> per net reg. ton	133	6	8
Tonnage dues at 3 <i>d.</i> per ton	150	0	0
Pilotage inwards	6	6	0
outwards	6	6	0
Launch attendance	5	5	0
Berthage dues	12	0	0
Towage (if required)	8	0	0

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ASHBURTON.

Ashburton is in lat. 21°40' S., long. 114°56' E.

Exports.—Sheep, wool, skins, and lead and copper ore.

Accommodation.—There is a timber jetty with a straight head, 1,120 ft. long, with a depth of 14 ft. 6 in. at ordinary spring tides, and 8 ft. at low tides. Steamers anchor $1\frac{1}{4}$ miles from the jetty. There are shipping facilities for sheep. The jetty is only suitable for lighters, for which there are two berths. There is a buoy at the anchorage, but being situated on the open coast line, it is very exposed to the N.W. There are cranes to lift 10 tons on the jetty head and 1 ton at the goods shed.

BROOME.

Broome is situated on Roebuck Bay, in lat. 17°55' S., long. 122°25' E. It is chiefly a pearling station.

Accommodation.—Broome is partially protected on the S. and S.W. by sand banks, and by land to N.E. and W. The jetty, which is 2,500 ft. long, has a depth alongside of 22 ft. 6 in. at ordinary high water springs; dry at low water. Rise of spring tide, 30 ft. There is a Customs warehouse, goods shed, a one-ton crane, and a tramway on the jetty. A supply of water can be obtained on the jetty. Meat and fish are plentiful, but vegetables are scarce.

BUNBURY.

Bunbury, in lat. 33°20' N., long. 115°40' E., is a small rising port 90 miles S. of Fremantle.

Population.—3,410.

Imports.—Dry goods, machinery, etc.

Exports.—Jarrah timber, wheat, tin, and coal.

Accommodation.—There is a jetty 1,850 ft. long, with 14½ ft. of water at the inner end, and 23 ft. at the outer end. There is a rise and fall of 2 ft. at spring tides, and 1 ft. 3 in. at neaps. There is only one tide in the 24 hours. The rise of water is much accelerated during winter months, sometimes before a N. gale the water rises 6 ft. The jetty is protected by a strong stone breakwater 4,000 ft. long, running in a W.W.E. direction, which protects any vessel at the jetty in all winds and weathers. There is a good system of buoyage down both sides of the jetty. There are also two heavy screw moorings and buoys capable of holding any vessel, sail or steam, in any weather, in 28 ft. ordinary low spring tides. There is a fixed white electric light at Causance Point which is visible 17 miles. Also a fixed green light on the sea end of the breakwater, visible 7 miles; and two fixed red leading lights on the jetty, 600 ft. apart, bearing W.W.E. and S.S.W. Good anchorage is found in 4½ fathoms, protected by the breakwater.

Western Australia—Bunbury (*continued*).

There are two lighter berths, where there is 8 ft. to 9 ft. of water available. A railway siding runs alongside each of these berths, and a 3-ton derrick is erected here. The jetty head is connected with the State Railway by means of a stone causeway and viaduct. There are four sets of rails on the head of the jetty capable of working five ships on the east and four ships on the west side, independently of each other.

At present three steam cranes of a capacity of 5 tons each are available on the jetty for ships discharging ballast or loading cargo; and a 3-ton steam winch; also several privately owned steam winches available. Privately-owned lighters are available for vessels which cannot complete loading at the jetty side. Throughout its entire length the jetty is lighted by electricity.

Pilotage.—Compulsory inwards. From sea to harbour, and vice versa, as follows :—

	£	s.	d.		£	s.	d.
Under 8 ft.	2	10	0	16 ft. and under 17 ft.	6	11	0
8 ft. and under 9 ft.	2	15	0	17 ft. „ 18 ft.	7	0	0
9 ft. „ 10 ft.	3	0	0	18 ft. „ 19 ft.	7	9	0
10 ft. „ 11 ft.	3	5	0	19 ft. „ 20 ft.	7	19	0
11 ft. „ 12 ft.	3	10	0	20 ft. „ 21 ft.	9	0	0
12 ft. „ 13 ft.	4	5	0	21 ft. „ 22 ft.	9	10	0
13 ft. „ 14 ft.	4	12	0	22 ft. „ 23 ft.	10	0	0
14 ft. „ 15 ft.	4	19	0	23 ft. and upwards	11	0	0
15 ft. „ 16 ft.	5	6	0				

For each removal :—Vessels of 1,000 tons net reg. and under, £2 each removal. Vessels over 1,000 tons net reg., £3 each removal. **Towage** :—A private company provides a tugboat at the rate of 6*d.* per reg. ton for sailing vessels, and £10 for steamers, these charges including all attendance.

Port Charges.—Tonnage and Light Dues.—See **Western Australia.**

Coal :—13*s.* per ton alongside. **Water** :—5*s.* per 1,000 gallons at the jetty.

Ballast :—Discharged at jetty, 1*s.* 6*d.* per ton for sand, 2*s.* per ton for stone.

Stevedore :—2*s.* 3*d.* to 2*s.* 9*d.* per load at hatchway; 6*s.* to 6*s.* 6*d.* per load, bow port.

Pro Forma Charges on a steamer of 2,567 tons net reg., loading 3,800 loads of Jarrah sleepers :—

	£	s.	d.
Berthing dues	12	0	0
Water, 10,000 gals.	2	10	0
Tug attendance	10	0	0
Mooring	1	0	0
Springs	15	0	0
Fumigation	1	10	0
Doctor's fee	4	10	0
Port dues	89	0	0
Agency	10	10	0
Stevedoring	500	0	0
	£646	0	0

BUSSELTON.

Busselton, or Port Vasse, in lat. 33°40' S., long. 115°25' E., is situated upon Geographe Bay.

Population.—About 450.

Export.—Timber of every description.

Accommodation.—Busselton is one of the best natural anchorages

Western Australia—Busselton (*continued*).

in the S. of Western Australia, and vessels provided with good ground tackle can use it both in summer and winter. There is a depth of 4 fathoms within a mile of the shore, and vessels are easily loaded with timber. There is a timber jetty with a straight head, extending seawards 4,032 ft. The head of the jetty is 260 ft. long and 31 ft. 6 in. wide, and has a depth alongside of 21 ft. 6 in. at high water, and 18 ft. 3 in. at low water. There is also a lighthouse with a fixed white light, visible about 14 miles.

Lockeville is about 4 miles E. of Busselton, and is connected by a railway 11 miles long with the timber stations inland. There is a jetty for loading lighters, but vessels have to lie about three miles off, in 5 fathoms.

For pilotage, harbour tonnage, and light dues, see **Western Australia**.

CARNARVON.

Carnarvon, in lat. $24^{\circ}55'$ S., long. $113^{\circ}50'$ E., is situated at the mouth of the Gascoyne River.

Population.—650.

Imports.—General merchandise, fencing wire, building materials, timber, dairy produce, provisions, breeding stock, etc.

Exports.—Wool, sheep, cattle, hides, skins, horses, sandal-wood, pearl shell, etc.

Accommodation.—Carnarvon is an open roadstead, partly protected by islands, which lie 40 miles W. There is a depth of 21 ft. at high water, and 16 ft. at low water. Tides rise 3 ft.; spring tides, 4 ft. 6 in. Vessels lie alongside the wharf, which is connected with the town by horse tramway, nearly 3 miles long, at the town end of which is a goods shed. There is a timber jetty, straight head, 4,580 ft. long, with a depth alongside of 16 to 21 ft. At the end of the jetty there are stock yards, and a cattle race. This jetty is equipped with one 6-ton crane.

Pilotage.—None.

Port Charges.—**Entrance Fees:**—£1 1s. Cattle boats, £2 2s. extra. **Light Dues:**—3d. per net reg. ton. **Berthage:**—1d. per ton on cargo landed or shipped, with a minimum charge of 10s. **Stevedores:**—3s. per ton. Horses and cattle, 1s. per head; sheep, 1d. **Labour:**—1s. 3d. per hour; overtime, 2s. 6d. per hour. **Customs Clearance:**—5s. Overtime, 2s. per hour.

Pro Forma Charges on a steamer of 2,667 tons reg., with 120 tons of cargo in, and loading 2,014 sheep and 21 horses outwards:—

	£	s.	d.
Berth dues		1	2 11
Entrance (including special fee)		3	3 0
Customs clearance		0	5 0
Light dues		33	6 9
Stevedore, loading sheep and horses		9	8 10
„ overtime, loading stock all night		6	13 6
Customs overtime		0	4 0
	£54	4	0

COSSACK (PORT WALCOTT).

Cossack, in lat. $20^{\circ}35'$ S., long. $117^{\circ}0'$ E., is the principal harbour on the north-west coast of Western Australia and the port for the W. Pilbarra gold-field.

Western Australia—Cossack (Port Walcott) (continued).

Exports.—Gold, wool, pearl shells, copper ore, and horses.

Accommodation.—The anchorage in Cossack Roads is open to the N. and is occasionally visited by a cyclone. Vessels unload into steam lighters. There is a quay wall of concrete masonry, 262 ft. long; depth of water at high ordinary spring tide, 13 ft. Low water, dry. Vessels usually anchor off Jarman Island. There is a stock jetty where lighters can lie afloat at low water, 18 ft. 6 in. high water springs, 5 ft. at low water springs, and also a jetty at Point Sampson (4 miles north of the town), with a T head. Depth of water, 33 ft. at high water springs, and 19 ft. low water springs. Also goods shed, bonded store, and 5-ton crane.

Port Charges.—Berthage Dues:—1*d.* per ton. Minimum, 10*s.*

DERBY.

Derby, in lat. 17°15' S., long. 123°45' E., is situated at the head of King Sound.

Exports.—Live cattle, sheep, and wool.

Accommodation.—There is a timber jetty with T head; length, 516 ft. Depth of water at end of jetty at high water spring tides, 29 ft.; dry at low water. There are two mooring buoys, and vessels can lie aground on soft mud at low water. Spring tides rise 36 ft. There is a goods shed, wool shed, cattle yards, and race with gangway, and tram on the jetty. Water can be obtained at the jetty. There is a 1-ton travelling crane.

ESPERANCE.

Esperance, in lat. 33°55' N., long. 121°50' E., is situated on the S. coast of Western Australia, and is the outlet from the W. Australian goldfields.

Accommodation.—It is protected in all directions except the south. There is a jetty 2,810 ft. long. Depth of water, 23 ft. 7 in. There are mooring buoys, goods shed, and bonded store. Communication by steamer with Albany.

For pilotage, harbour, light and tonnage dues, see **Western Australia.**

FLINDERS BAY.

Flinders Bay, in lat. 34°30' S., long. 115°30' E., is situated three miles E. of Cape Leeuwin lighthouse.

Imports.—General merchandise.

Export.—Timber.

Accommodation.—This bay is protected from the N. and W. by the mainland, and on the S. by Alouran Inlet and reefs, but is exposed to the S.E. It is safe from the beginning of May to the end of October, but occasional strong summer gales occur, accompanied by a heavy ground swell. There is a timber jetty with straight head, extending 1,242 ft. from the shore line; head 644 ft. long and 53 ft. wide. Depth at end of jetty at high water, 36 ft., and 34 ft. at low water. There are four berths up to 300 ft., two having a depth of 31 ft. at high water, and 29 ft. at low water, and two with a depth of 26 ft. at high water, and 24 ft. at low water. There are rails on the jetty which run direct to the mills, and vessels can be loaded direct from the trucks. There are donkey winches for handling timber.

Western Australia—Flinders Bay (*continued*).

Vessels can lie alongside during rough weather. Repairs to vessels can be effected here, and small castings made. Fresh water can be obtained at the jetty.

Fresh meat and vegetables can be easily obtained.

For pilotage, harbour, tonnage, and light dues, see **Western Australia**.

FREMANTLE.

Fremantle, at the mouth of the Swan River, is in lat. $32^{\circ}10' N.$, long. $115^{\circ}48' E.$, and is the chief port of Western Australia.

Population.—18,945.

Exports.—Sandal-wood, copper and lead ores, wool, pearls, mother-of-pearl shells, timber, manna, gum, mallet bark, and skins.

Accommodation.—The port consists of Gage Roads, Owen's Anchorage, Cockburn Sound, and the inner harbour. Gage Roads is a large area enclosed between a long line of islands and reefs and the mainland. The Roads are about 5 miles wide by 8 miles long, and are open only to the N. Owen's Anchorage and Cockburn Sound lie to the south of Gage Roads. Cockburn Sound is a spacious harbour, with a depth of 5 to 12 fathoms, and anchorage in any of these areas is good and safe in all weathers, the bottom being sand.

The inner harbour, where practically all the shipping business of the port is now carried on, is an artificial harbour, constructed within the estuary of the Swan River. The entrance is protected by two moles, that on the north being 4,800 ft. in length, and that on the south 2,040 ft. The channel between is 450 ft. in width, and runs from the 30 ft. contour (which is within the protection of the North Mole) for a length of 3,000 ft. to the harbour. At its inner end this channel is widened out for a length of 1,550 ft. till it reaches a width of 575 ft. The harbour proper has a length of about 4,500 ft., and is for the most part 1,400 ft. in width. The depth of water in the channel and harbour throughout is 30 ft. below lowest low water. The total wharfage accommodation already completed inside the harbour is 9,255 ft., of which 7,955 ft. has a uniform depth of 30 ft., while 1,000 ft. has a depth ranging from 26 ft. 6 in. to 22 ft., and 300 ft. has a varying depth of 20 ft. to 16 ft. 6 in., all at extreme low water.

Three sets of heavy screw moorings are laid in the inner harbour, to which vessels may moor when they do not require to come alongside a wharf.

Steamers of heavy draught constantly berth at the quays, navigating the entrance channel and harbour under their own steam; the greatest draught thus dealt with so far has been 29 ft. 8 in.

The wharves are in direct communication with the railway system, and every facility is given to importers landing goods for inland consumption, to consign them direct from the ship's side in railway wagons.

Vessels awaiting inspection by the health authorities lie in Gage Roads, immediately off the entrance to the inner harbour.

All ordinary repairs to wooden or iron vessels can be carried out at Fremantle, and any vessel which can be accommodated on the present slip can have what repairs may be necessary carried out in her.

The port is so very sheltered that it is a perfectly safe and easy operation to "heave down" or "tip" vessels, and this has been done repeatedly with vessels of large tonnage.

Western Australia—Fremantle (continued).

There is a patent slip capable of taking up vessels of 850 tons deadweight. Charge for a vessel of 1,500 tons gross reg., 6d. per ton per day. There is also a floating crane to raise 25 tons.

Time Signals.—Chromometers can be checked. A ball is hoisted on a flagstaff on Arthur Head 3 minutes before the signal and dropped at 1 h. 0 m. 0 s. p.m. standard time of West Australia, equal to 17 h. 0 m. 0 s. Greenwich mean time, and 0 h. 42 m. 57 s. local mean time.

Pilotage.—Compulsory, inwards. Pilotage through the Challenger Passage out of Cockburn Sound to the sea, and out of the inner harbour is also compulsory, outwards. **Charges:**—Pilot ground to Gage Roads—*Steamers*, 3d. per ton on net reg. tonnage; maximum, £21. *Sailing Vessels*, 4d. per ton on the net reg. tonnage; maximum, £15. Gage Roads to the inner harbour, or vice versa, steamers or vessels towed by steam, £2 each way. **Removals** (exclusive of towage) are compulsory, and are charged for as follows: Within the inner harbour, £2 for each service. Outer harbour, (a) Gage Roads or Owen's Anchorage to Cockburn Sound, or Cockburn Sound to Owen's Anchorage, Gage Roads, or to sea, 2d. per ton on net reg. tonnage; minimum £4; maximum £8. (b) Gage Roads to Owen's Anchorage, or vice versa, £2 each way.

Towage:—Towage is done by private firms. The rates are as follows:—

SAILING VESSELS.

	Per ton. s. d.
From Sea, to and from Gage Roads, 1d. to 3d. per ton, as below—	
<i>Inwards</i> —Wind north from position S.W. of Rottnest	0 3
.. .. south N.	0 2
.. .. " .. " .. Pilot Ground	0 1
.. .. " .. " .. Off Hall's Bank	0 1
<i>Outwards</i> —Winds and positions vice versa, same rates.	
.. Wind N. to N.E. to position both Rottnest Lights in line	0 2½
Gage Roads to and from River, 6d. ton (<i>then 'outwards free'</i>).	
Ships part loaded Rockingham, finishing in Swan River, outwards from River to Roads	0 3
River or Gage Roads to Rockingham	0 6
Rockingham to River or Gage Roads via Challenger Passage	0 6
Rockingham to Sea via Challenger Passage	0 6

Removal of Sailing Vessels in River, in addition to above—

	£	s.	d.
500 tons register and under	2	0	0
Over 500 tons reg. and under 1,000	2	10	0
1,000 1,500	3	0	0
1,500 2,000	3	10	0

Use of Tug's Lines or Hawser—

Sea to Roads or vice versa	each way	3	0	0
In and out of River	"	2	0	0

STEAMERS.

Assisting in and berthing (1 tug)	6	0	0
Plucking off wharf (1 tug)	3	0	0
Steamer's removals in River when not under steam, £4 10s. each tug.			

Port Charges.—Vessels arriving for repairs, coaling, orders, or provisions pay no harbour or tonnage dues, but are charged a special rate of half the pilotage rates, up to a maximum of £10 per entry into the port.

Tonnage Dues:—Foreign-going vessels, 3d. per ton inwards, and 3d. per ton outwards. If cargo in or out is in excess of net reg. tonnage, the net reg. tonnage is taken, but if the cargo is less than net reg. tonnage, then

Western Australia—Fremantle (continued).

tonnage of cargo is taken. Inter-state and coastal vessels pay from 2*d.* downwards per ton on their net reg. tonnage. **Berthing Dues** :—At inner harbour wharves : Ocean-going steamers, 2*d.* per ton on all cargo landed or shipped, on the first 2,400 tons, and 1*d.* per ton on the balance ; minimum, £3. Coasters up to 200 tons reg., 2*d.* per ton, similarly ; minimum, 5*s.* All other vessels, 2*d.* per ton, similarly ; minimum, £3. All outer harbour jetties, half inner harbour rates. Vessels using moorings are charged the same rates as if occupying berths at the wharves. **Lay days** :—The time allowed depends upon the reg. tonnage, and varies from 2 days for 100 tons to 7 days for 600 tons, and 1 day extra for each additional 200 tons. Timber ships are allowed lay-days ranging from 3 days for 150 tons to 8 days for 500 tons, and 1 extra day for every additional 200 tons. At the end of these lay-days, a penalty of from $\frac{1}{4}$ *d.* to $\frac{1}{2}$ *d.* per reg. ton per day is levied. **Ballast** :—Sandy rubble is supplied in lighters alongside vessel for 3*s.* 3*d.* per ton, or on board for 4*s.* 6*d.* per ton. Vessels arriving with good hard rock or broken metal ballast can find sale for same, but there is no market for sand or clay ballast. **Water** :—For boilers, 4*s.* per 1,000 gallons up to 35,000 gallons. From 35,000 gallons to 55,000 gallons, 3*s.* per 1,000 gallons. From 55,000 gallons to 75,000 gallons, 2*s.* 6*d.* per 1,000 gallons. Over 75,000 gallons, first 35,000 at 4*s.* per 1,000 gallons : next 40,000 gallons at 2*s.* 9*d.* per 1,000 gallons, and the balance at 2*s.* per 1,000. Drinking water, delivered on board from lighters, 12*s.* to 18*s.* per 1,000 gallons. **Coal** :—Bunker coal varies from 27*s.* 6*d.* to 30*s.* per ton (in bunkers), New South Wales coal. There is generally from 7,000 to 8,000 tons ready for loading. **Stevedoring Charges** :—General cargo, 1*s.* per ton. Coke and coal, 1*s.* 4*d.* per ton. Jarrah (loading and stowing), 2*s.* 6*d.* to 3*s.* 6*d.* per load of 50 cubic ft., according to the size of the logs. Steamers provide winches and drivers, who are paid 11*s.* per day of 8 hours. **Light Dues** :—See **Western Australia**.

Pro Forma Charges on a steamer discharging 4,500 tons of cargo at Fremantle :—

	£	s.	d.
Cash to captain	33	0	0
Cables	0	18	0
Port charges	60	10	9
Light dues	47	13	4
Berthing dues	20	0	0
Harbour trust	2	18	6
Duty stores	3	10	2
Boatman	1	0	0
Engineers	28	4	6
Ship's supplies	43	16	6
Water	8	8	10
Customs overtime	1	7	0
Fremantle laundry	1	17	2
Survey fees	8	8	0
Fumigating	1	10	0
Noting protest	0	12	6
Rat guards	1	8	0
Medical attendance	4	4	0
Towage	8	0	0
Stevedore	223	8	1
Supplies	17	0	11
Claims	4	2	6
Tally clerks	16	17	0
Cargo books	0	12	0
Postage and petties	5	2	2

Western Australia.

GERALDTON.

Geraldton, in Champion Bay, is in lat. $28^{\circ}40'$ S., long. $114^{\circ}40'$ E., about 220 miles N. of Fremantle.

Population.—2,600.

Exports.—Wool, lead ore, sandal-wood, and wheat.

Accommodation.—The beach is free from rocks, and affords good landing at a wooden jetty, near the town. Anchorage is found in 4 fathoms, about three-quarters of a mile from the shore. Vessels drawing 18 ft. can lie alongside the jetty, and can load and discharge direct into railway trucks. The jetty is extended into 20 ft. of water. The length of the jetty from the shore line is 2,447 ft., and the length of the head 1,768 ft. There is only one tide a day, with an average rise of 2 ft. There are two hand cranes on the jetty, also railway and goods shed. Vessels not coming alongside the wharf load and discharge by means of sailing lighters.

Pilotage.—Compulsory. Charges as follows :—

			£	s.	d.				£	s.	d.
Under 8 ft.			2	10	0	16 ft. and under	17 ft.		6	11	0
8 ft. and under	9 ft.		2	15	0	17 ft.	18 ft.		7	0	0
9 ft.	10 ft.		3	0	0	18 ft.	19 ft.		7	9	0
10 ft.	11 ft.		3	5	0	19 ft.	20 ft.		7	19	0
11 ft.	12 ft.		3	10	0	20 ft.	21 ft.		9	0	0
12 ft.	13 ft.		4	5	0	21 ft.	22 ft.		9	10	0
13 ft.	14 ft.		4	12	0	22 ft.	23 ft.		10	0	0
14 ft.	15 ft.		4	19	0	23 ft. and upwards			11	0	0
15 ft.	16 ft.		5	6	0						

Vessels of 1,000 tons net reg. and under, £2 each removal. Vessels over 1,000 tons net reg., £3 each removal.

Port Charges.—Tonnage and light dues, see **Western Australia.**

HAMELIN.

Hamelin is in lat. $34^{\circ}15'$ S., long. $115^{\circ}5'$ E.

Export.—Timber.

Accommodation.—This port lies between North Point and White Cliff Point, and is protected from the southward and westward by Hamelin Island and the reefs extending from it. The bay affords good shelter during the summer months, or with winds southwards of W., but is open between N. and W., from which quarter severe gales are experienced from May to November. An inner harbour lies immediately S. of Peak Islet, with a depth of 4 to $4\frac{1}{2}$ fathoms, and, although of small extent, it is a secure haven during the summer months. There is a jetty with a depth of 17 ft. alongside, and connected with the Karridale timber station by rail.

For pilotage, harbour, tonnage, and light dues, see **Western Australia.**

PORT GREGORY.

Port Gregory is in lat. $28^{\circ}10'$ S., long. $114^{\circ}14'$ E.

Population.—About 30 employees at the salt works during the season.

Export.—Salt.

Accommodation.—Port Gregory is used by the lessees of the Hutt Lagoon for the purpose of exporting salt which accumulates in the

Western Australia—Port Gregory (continued).

lagoon during the summer season. It is only suitable for vessels of 200 to 300 tons reg., drawing 12 to 14 ft. Vessels should enter by Hero Passage. A strong current prevails during S. winds, with northerly set. The anchorage is S.W. of the jetty. There is no space for swinging at single anchor so that vessels moor with one anchor on the shoal bank, within the ledge (which forms the harbour), and the other on the beach.

Port Charges.—Tonnage and light dues, see **Western Australia.**

PORT HEDLAND.

Port Hedland is in lat. $20^{\circ}19' S.$, long. $118^{\circ}36' E.$

Exports.—Wool, skins, sheep, cattle, horses, tin, gold, and copper.

Accommodation.—The harbour is landlocked and perfectly protected, and the entrance to the channel is defined by beacons. There is a timber jetty 480 ft. long, with a T head, 252 ft. long, with a depth of water of 39 ft. high ordinary spring tides, and 16 ft. at low water. Rise of spring tides, 23 ft. Tide signals are used to show the depth of water on the bar. An additional jetty 310 ft. long is being constructed. There are also two mooring dolphins, a goods shed, cattle yards, and bonded store. There is a water supply on the jetty.

Port Charges.—**Berthing Dues:**—1d. per ton. **Light Dues:**—4d. per reg. ton. Light dues entitle a vessel to the use of all lights on the coast of W. Australia for a period of three months in the State, and two months out of the State.

Pro Forma Charges on a vessel of 2,759 tons reg. :—

	£	s.	d.
Berthing dues	2	17	4
Customs overtime	2	5	0
Wharf overtime	4	2	9
Light dues	45	19	8
	<hr/>		
	£55	4	9

PORT WALCOTT.

(See **Cossack**, p. 1592.)

QUINDALUP.

Quindalup, in lat. $33^{\circ}40' S.$, long. $115^{\circ}10' E.$, is 10 miles W. of Busselton.

Export.—Timber.

Accommodation.—Vessels anchor in 4 fathoms 1 mile from the shore, and load timber by lighters from a jetty connected with the forest by a tramway. Labour at present is very scarce and dear, many employers have lately been compelled to introduce coolie labourers.

For pilotage, harbour, tonnage, and light dues, see **Western Australia.**

WYNDHAM.

Wyndham, in lat. $15^{\circ}31' S.$, long. $128^{\circ}5' E.$, is at the head of Cambridge Gulf.

Exports.—Chiefly live cattle.

Accommodation.—Wyndham is thoroughly protected. There is a timber jetty with a T head; length, 230 ft.; depth of water at end, 20 ft. neap tides; 5 ft. low water; and 28 ft. 9 in. at high water springs. Rise and fall of tide, 23 ft. There is a goods shed, cattle yard, race and gangway, and a tramway on the jetty. Vessels at low water lie aground in soft mud.

NEW ZEALAND.

The Colony of New Zealand is an archipelago lying in the South Pacific, about 1,200 miles E.S.E. of Australia, and almost entirely between the parallels of 34° and 47° S. It is made up of two principal islands, known as the North and South Islands and Stewart Island, together with a number of smaller groups, amongst which are the Chatham, Cook, Auckland, and Kermadec islands. The archipelago has a total area of 104,751 square miles, with a population, estimated on the basis of the census taken in 1906, of a little over one million. The colony enjoys the benefit of a coast line extending over something like 4,330 miles.

Commerce.—Like the majority of the Australasian colonies, the commerce of New Zealand is much greater than the population might lead one to suppose. Thus, for the year ended September 30, 1907, the total over-sea trade was valued at £35,963,733, made up of imports £16,071,887 and exports £19,891,846. The quantities and values of imports are obtained from the entries made at the Customs, verified by invoices, and where necessary, as in the case of goods subject to an *ad valorem* duty, by examination. The export returns are in accordance with the valuations “free on board in New Zealand” as given by the exporters, but the Collector of Customs examines these returns, so far as the main items are concerned, with the utmost care, comparing them with current price lists so as to prevent any over-estimation in the value of the colony's products. The whole of the imports may be taken as for domestic consumption, a very small quantity of merchandise passing in transit through New Zealand. The principal articles of import consist of textiles, clothing, iron and steel goods, machinery, paper printed books and stationery, sugar, spirits, wines and beer, tobacco, cigars, tea, fruit, oils, fancy goods, bags and sacks, together with a small quantity of coal. The colonial products exported include wool, gold, frozen meat, butter and cheese, phormium (fibre), hides, skins and leather, tallow, Kauri gum, grain, pulse, and flour.

Mercantile Marine.—The commercial marine of the colony consists of 608 vessels of 122,760 tons, made up of 317 sailing vessels of 41,455 tons, and 291 steamers of 81,305 tons. The configuration of the colony and the difficulty of traversing a country having few good roads has aided the development of a very considerable coasting traffic, and regular steamers are now engaged in the coasting and inter-colonial trade.

Internal Communications.—Railway lines, linking the ports and the chief inland towns, and at the same time opening up the principal agricultural districts of the colony, have been constructed in both the North and South Islands. These have a length of nearly 3,000 miles, the majority being owned and worked by the Government, who are opening up fresh lines in various districts. All the chief towns are provided with tramway systems, whilst a very complete post and telegraph service has been organized, and telephones established in a number of the chief commercial centres.

Currency, Weights and Measures.—In New Zealand the denominations of money used in keeping accounts are pounds, shillings, and pence sterling, and the only legal current coins are the gold, silver, and bronze coins of Great Britain, and the gold and silver coins issued by the Imperial

New Zealand.

Branch Mints at Melbourne and Sydney. The weights are the same as those in use in the United Kingdom.

Light Dues.—The only Government charge on shipping in the colony is the lighthouse dues levied in accordance with the Order in Council of September 15, 1908. This charge, particulars of which are set out in the following table, is collected on all ships arriving at the ports specified in the first column of the said table, it being also provided that a vessel from any place out of New Zealand first arriving at a port where lighthouse dues are not charged shall, on arriving at any other port where lighthouse dues are chargeable, be charged the same rate as if she had arrived at such port direct.

SCHEDULE.

Port.	Nature of Voyage and Class of Vessels.	Rate per ton register.
Auckland . . .		s. d.
Kaipara . . .		
Manukau . . .		
Whangarei . . .		
Thames* . . .		
New Plymouth . . .		
Napier . . .		
Wanganui . . .	Foreign-going sailing ships other than inter-colonial trading ships.	0 6
Wellington . . .	Inter-colonial trading sailing ships, and all steamers except home-trade steamers	0 4
Pictou . . .	Home trade ships.	0 0½
Havelock . . .	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
Kaikoura . . .	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
Wairau . . .	Sailing or steam pleasure yachts plying or voyaging in the home trade.	0 0½
Nelson . . .		
Westport . . .		
Greymouth . . .		
Hokitika . . .		
Kaiapoi . . .		
Lyttelton . . .		
Akaroa . . .	* Ships trading between Thames and Auckland, or between Coromandel and Thames, shall not be required to pay lighthouse dues at more than one port in one day.	
Timaru . . .		
Oamaru . . .		
Dunedin . . .		
Bluff . . .		
Invercargill . . .		
Riverton . . .		
	Foreign-going sailing ships other than intercolonial-trading ships	0 6
	Intercolonial-trading sailing ships, and all steamers except home-trade steamers	0 4
	Home-trade ships, except ships from any port on the west coast of the North Island between Motu Pea and Hokianga	0 0½
Hokianga. . .	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
Whangape . . .	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
Herekino . . .	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any port on the west coast of the North Island between Motu Pea and Hokianga	0 0½
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial trading sailing ships, and all steamers except home trade steamers	0 4
	Home trade ships, except ships from any port on the east coast of the North Island between North Cape and Bream Head.	0 0½
Mongonui. . .	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
Whangaroa . . .	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
Russell . . .	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any port on the east coast of the North Island between North Cape and Bream Head.	0 0½

New Zealand.

SCHEDULE—(continued).

Port.	Nature of Voyage and Class of Vessels.	Rate per ton register.
Tauranga	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial trading sailing ships and all steamers except home trade steamers	0 4
	Home trade ships, except ships from any port on the east coast of the North Island between Hicks Bay and Kurunga Point, Mercury Bay	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any port on the east coast of the North Island between Hicks Bay and Kurunga Point, Mercury Bay	0 0½
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial sailing trading ships, and all steamers except home trade steamers	0 4
	Home trade ships, except ships from any port on the east coast of the North Island between Table Cape and Waiaapu River.	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
Gisborne	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade limits, except those from any port on the east coast of the North Island between Table Cape and Waiaapu River	0 0½
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial sailing trading ships, and all steamers except home trade steamers	0 4
	Home trade ships, except ships from any place between Cape Egmont and Raglan	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any place between Cape Egmont and Raglan	0 0½
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial trading sailing ships, and all steamers except home trade steamers	0 4
Mokau Waitara	Home trade ships, except ships from any port on the west coast of the North Island between Opunake and Rangitikei	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any port on the west coast of the North Island between Opunake and Rangitikei	0 0½
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial trading sailing ships, and all steamers except home trade steamers	0 4
	Home trade ships.	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any port on the west coast of the North Island between Opunake and Rangitikei	0 0½
Manawatu (Foxton) Patea	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial trading sailing ships, and all steamers except home trade steamers	0 4
	Home trade ships.	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade, except those from any port on the west coast of the North Island between Opunake and Rangitikei	0 0½
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial trading sailing ships, and all steamers except home trade steamers	0 4
	Home trade ships.	0 0½
	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
Coromandel	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade	0 0½
	Ships trading between Coromandel and Auckland, or between Coromandel and Thames, shall not be required to pay lighthouse dues at more than one port in one day.	

New Zealand.**SCHEDULE—(continued).**

Port.	Nature of Voyage and Class of Vessels.	Rate per ton register.
	Foreign-going sailing ships other than intercolonial trading ships	0 6
	Intercolonial-trading sailing ships and all steamers except home trade steamers	0 4
	Home-trade ships, except ships from any place between Cape Campbell and Kowai River	0 0½
Kaikoura . . .	Foreign-going sailing pleasure yachts other than intercolonial yachts	0 6
Port Robinson . . .	Intercolonial sailing and all steam pleasure yachts, except those plying or voyaging in the home trade	0 4
	Sailing or steam pleasure yachts plying or voyaging in the home trade, except between any place from Cape Campbell to Kowai River	0 0½
	Home trade ships, except ships from any place between Cape Foulwind and Kahurangi Point	0 0½
Karamea . . .	Sailing or steam pleasure yachts plying or voyaging in the home trade, except yachts from any place between Cape Foulwind and Kahurangi Point	0 0½

The term "intercolonial ship or yacht" when used in this Order in Council, means and includes any vessel actually trading or plying between New Zealand and any port within the Commonwealth of Australia, or between New Zealand and any of the islands lying between the parallels of 30° N. and 30° S. latitude and the meridians of 155° E. and 130° W. longitude.

The term "home trade ship" or "yacht" means and includes all ships employed in trading or plying from any one part of the Dominion to any other part thereof.

The terms "steamers" and "steam pleasure yachts" mean and include all ships propelled by steam and other mechanical power than steam.

Ships engaged solely in fishing or whaling ships in distress, and ships putting in to re-fit or for water and provisions, or steamships calling at any port for the purpose of filling up with coal their permanent bunkers in which cargo is never carried are exempt from light dues, and this Order in Council shall be construed accordingly.

Shipping Agency Fees.—On procuring money on bottomry, 5 per cent. ; procuring freight on charter for vessels, 5 per cent. ; collecting freight and passage money, 5 per cent. ; on ship's disbursements and outfits (including amounts paid to captains when in port)—if not in funds, 5 per cent. ; if in funds, 2½ per cent. ; entering and clearing vessels from England or elsewhere (the Australian colonies alone excepted), £5 5s. ; on entering or clearing coasting vessels from the Australian colonies, £1 1s. to £3 3s. ; fee for survey of hatches or stowage (each survey), £1 1s. ; fee for survey of damaged goods (each survey), according to circumstances, £1 1s. to £5 5s. ; settling insurance losses, total or partial, and on procuring return of premium (on amount recovered), 2½ per cent.

Pilotage.—Pilotage is compulsory for merchant vessels at the following ports, Thames, Wairoa, Wanganui, Patea, New Plymouth, Waitara, Nelson, Lyttelton, Timaru, Otago, Bluff Harbour, Invercargill (New River), and Westport. At other ports pilotage is not compulsory, and pilots only board vessels when signalled for, fees not being charged unless the pilot is engaged.

Harbour Regulations.—Unless previously received, a copy of the general harbour regulations and by-laws is given by the harbour master to the master of any ship upon arrival for the first time in a New Zealand port.

Uniform System of Buoyage.—Entering from seaward, buoys coloured red mark the starboard side of the channel, and buoys coloured

New Zealand.

black, or parti-coloured, mark the port side of the channel. Buoys marking middle grounds are coloured in horizontal stripes.

Standard Time.—Throughout New Zealand one uniform time is kept, called “New Zealand standard mean time,” computed for $172^{\circ}30'$ E. longitude, the approximate mean longitude of the New Zealand Islands, or $11\frac{1}{2}$ hours fast of Greenwich mean time.

Emigration.—There is no emigration.

Immigration.—It is not lawful for any person of the following classes to land in New Zealand; that is to say:—

(1) Any person other than of British (including Irish) birth and parentage who, when asked so to do by a duly appointed officer, fails to himself write out and sign, in the presence of such officer, in any European language, an application for admission to the Colony; provided that any person dissatisfied with the decision of such officer shall have the right to appeal to the nearest stipendiary magistrate, who shall make such inquiries as he shall think fit and his decision thereon shall be final.

(2) Any idiot or insane person.

(3) Any person suffering from a contagious disease which is loathsome or dangerous.

(4) Any person the date of whose arrival in New Zealand is earlier than two years after the termination of any imprisonment suffered by him in respect of any offence which, if committed in New Zealand, would be punishable by death or imprisonment for two years or upwards, not being a mere political offence and no pardon having been granted. Provided that no shipwrecked persons shall at any time be refused admission.

Any person who, according to the Immigration Restriction Act of 1889, appears to be prohibited under Clause I, given above, may lawfully land in the colony upon the following conditions, that is to say:—

(1) He shall, before landing, deposit with an officer the sum of one hundred pounds.

(2) He shall, within the period of fourteen days after landing, obtain from the Colonial Secretary or a stipendiary magistrate a certificate that he does not come within the prohibition of this Act.

(3) If within such period he duly obtains such certificate, such deposit shall be returned to him and he shall cease to be subject to the Act; but if not, then such deposit shall be forfeited to His Majesty, and he shall be deemed to be a prohibited immigrant who has unlawfully landed in New Zealand.

Provided that the forfeiture of his deposit shall be deemed to be in satisfaction of the penalty of one hundred pounds prescribed, as payable by prohibited persons landing in the Colony, and also that no liability shall attach to the vessel, its master or owners, by reason of his having landed, except the liability for the expenses of his removal from New Zealand and of his detention and maintenance in New Zealand pending such removal.

Should, however, a prohibited immigrant land in the colony in contravention of the Restriction Act, the master and owner of the vessel by which he was brought to New Zealand will be deemed to be held jointly and severally liable to a penalty of £100 in respect of each such immigrant, and also to defray the cost incurred by the Government in respect of such immigrant's removal from New Zealand, and of his detention and maintenance in New Zealand pending such removal.

New Zealand.

In any case where prohibited immigrants are transhipped from one vessel to another for the purpose of being brought to New Zealand, the provisions of the Act will apply to both such vessels, their masters and owners, in like manner as if such immigrants had been brought to New Zealand by both such vessels.

No vessel will be cleared out of any port of New Zealand unless and until all the provisions of the Act relating to such vessel, its master and owner, have been duly complied with, nor until all penalties and other moneys payable by such master or owner have been fully paid, or have been duly secured by bond.

In any case where the Commissioner of Customs is of opinion that the master or owner of any vessel has committed any offence, or made any default, or is liable for the payment of any penalty or other moneys, the following special provisions will apply:—

(1) The Commissioner may by writing under his hand authorize any person, being an officer of Customs or member of the Police Force, to detain such vessel.

(2) Such detention may be either at the port or place where such vessel is found, or at any port or place to which the Commissioner orders such vessel to be brought.

(3) For the purposes of such detention the person authorized to effect the same shall be entitled to obtain in the customary manner such writ of assistance or other aid and assistance in and about the detention of or other lawful dealing with the vessel as would be available in the case of vessels or goods seized under any Act relating to the Customs.

(4) Such detention shall be for safe custody only, and shall be discontinued if a bond with two sufficient sureties to the satisfaction of the Commissioner is given by the master or owner for the full payment of all penalties and other moneys then payable, or that may thereafter be adjudged to be payable, under this Act in respect of any such offence, default, or liability (including the costs incurred in and about the detention of the vessel).

If default is made by the master or owner of any vessel in payment or in securing by bond as aforesaid the full payment of any penalty or other moneys payable under this Act by such master or owner, then the following provisions will apply:—

(1) Such vessel may be seized and sold under the provisions for seizure and sale of vessels or goods contained in any Act relating to the Customs, and for that purpose the provisions of subsection 3 last-preceding shall, *mutatis mutandis*, apply.

(2) The proceeds of such sale shall be applied—first, in payment of the costs incurred in and about the detention, seizure, and sale of the vessel; secondly, in payment of all penalties and other moneys payable under this Act as aforesaid by the master or owner; and the surplus (if any) shall be paid to the owner or other person lawfully entitled thereto.

AKAROA.

Akaroa is in lat. 43°47' S., long. 173°0' E.

Population.—About 600.

Accommodation.—The harbour extends in a northerly direction

New Zealand—Akaroa (continued).

for more than 8 miles, and affords secure and landlocked anchorage for any number of vessels, and is easy of access in moderate weather. The entrance is nearly a mile wide, and above Pakaiariki Bay, nearly 6 miles from the Heads, there is good anchorage in not less than 3 fathoms at low water. A light is placed on the end of Akaroa jetty.

AUCKLAND.

Auckland Harbour, in lat. $36^{\circ}57'$ S., long. $174^{\circ}43'$ E., consists of an extensive landlocked estuary at the southern end of the Hauraki Gulf.

Population.—Including suburbs, 82,101.

Imports.—General merchandise, English and American manufactured goods, salt, mining, and agricultural machinery.

Exports.—Timber in spars, bulk, and sawn; kauri gum, gold, silver, wool, hemp, skins, leather, oil, tallow, dairy products, frozen meat and fish, coal, ores, island produce, shells, copra, etc.

Accommodation.—The outer harbour commences about 6 miles from the North Head, a promontory which forms the northern boundary of the inner harbour (known as Waitemata). The inner harbour is about 15 miles long, the width varying from two miles at the entrance to a mile. The deep water channel has an average width of three-quarters of a mile. The harbour is completely sheltered from all winds, and affords a safe and sheltered anchorage for any number of vessels. Spring tides rise and fall from 9 to 10 ft. The depth of water in the harbour varies up to 15 fathoms. The lighting of the harbour has lately been very much improved by the installation of an occulting light on Rangitoto Beacon, and two occulting oil light buoys for the marking of the approach to the harbour.

There is 30 to 36 ft. of water available for vessels entering the port at low ordinary spring tides. There are two wharves (with numerous T's) 1,000 and 1,200 ft. respectively in length. There are also smaller wharves. The total wharfage is about 15,000 ft., of which 3,700 ft. has a depth alongside of from 18 to 26 ft. at low water ordinary springs. There are eight cranes on the wharves to lift from 2 to 12 tons each. There are four hulks.

Docks:—There are two graving docks—the Calliope on the northern shore, and the Auckland on the southern. Calliope Dock is 566 ft. in length at the coping level and $77\frac{1}{2}$ ft. in width at the entrance at the high springs level, with a depth of water on the sill of 33 ft. A complete equipment of modern machinery has been installed, including 80 ton sheer legs. The Auckland Dock, which is used for smaller vessels, is 312 ft. long over all, 43 ft. wide at the entrance at the ordinary high spring level and has a depth on the sill of $13\frac{1}{2}$ ft. Dolphins for vessels to swing at have been constructed about 6 miles from the wharves. **Charges for Calliope Graving Dock:**—Entrance, £5 5s. Vessels up to 300 tons gross reg. for 4 days, £20, and £2 10s. more for each additional 100 tons up to 1,100 tons; 1,101 to 1,200 tons, £45; 1,201 tons and upwards, £50. After the fourth day, up to 500 tons, 4d. per ton per day; 501 to 1,000 tons, 3d.; 1,001 to 2,000 tons, $2\frac{3}{4}$ d.; 2,001 to 3,000 tons, $2\frac{1}{2}$ d.; 3,001 to 4,000 tons, $2\frac{1}{4}$ d.; over 4,000 tons, 2d. per ton per day. **Charges for Auckland Graving Dock:**—Entrance, £1 1s. Vessels of 100 tons gross reg. and under, £5 per day; 101 tons to 200 tons, £6 per day. Every additional ton, 2d. per day.

New Zealand—Auckland (continued).

Pilotage.—Not compulsory, but the pilot meets all strange steamers, usually between Rangitoto Reef and Firi Firi Island. **Inwards :**—Sailing vessels, 3*d.* per ton. Steam vessels, 2*d.* per ton net reg. **Outwards :**—Sailing vessels, 3*d.* per ton. Steam vessels, 2*d.* per ton net reg. Maximum charge, 5,000 tons. **Towage :**—According to agreement.

Port Charges.—Upon all vessels on arrival, 3*d.* per ton half yearly (in one payment), maximum charge, 5,000 tons. **Harbour-master's Fees :**—For every service performed by a harbour-master in respect of any vessel, 1*d.* per ton net reg., minimum, 10*s.* **Lighterage :**—About 2*s.* 6*d.* per ton. **Lumper's Charges :**—According to agreement. **Light Dues :**—Per reg. ton, sailing vessels from any port beyond Australian Colonies, 6*d.*; steam and other vessels from Australian colonies, 4*d.*; steam and sailing vessels employed in coasting trade, $\frac{1}{4}$ *d.* per ton per trip.

Crane Dues :—Fees for the use of any crane other than the 12-ton crane provided by the Board :—

All weights under 2 tons free.	s. d.
For all weights of 2 tons and upwards lifted during the first hour	10 0
For each hour or portion of an hour the crane is employed as above, after the first hour	5 0

DUES FOR 12-TON CRANE.

For all weights from	2 to	3 tons, for each lift	£	s.	d.
.. .. .	3 ..	4 tons	0	4	0
.. .. .	4 ..	5 tons	0	7	6
.. .. .	5 ..	6 tons	0	12	0
.. .. .	6 ..	7 tons	1	0	0
.. .. .	7 ..	8 tons	1	10	0
.. .. .	8 ..	9 tons	2	5	0
.. .. .	9 ..	10 tons	2	17	6
.. .. .	10 ..	11 tons	3	10	0
.. .. .	11 ..	12 tons	4	5	0
.. .. .	12 ..	13 tons	5	0	0

All crane dues shall be paid before the crane is used.

Ballast :—Stone ballast, in stream or on wharf, 4*s.* 6*d.* per ton; earth, 2*s.* 6*d.* per ton; sand or shingle, according to arrangement. **Water :**—Up to 4,000 tons, 1*s.* 3*d.* Beyond 4,000 tons in one year, 1*s.* 1*d.* Ships of war, 1*s.* **Coaling :**—The coaling companies have large stores of coal in hulks always available, and steamers can coal rapidly at reasonable rates.

BLUFF HARBOUR.

Bluff Harbour, or Awarua, the port of Invercargill (population, 14,000), is in lat. 46°38' S., long. 168°30' E.

Population.—1,472.

Exports.—Frozen mutton, beef, wool, hides, tallow, grain, timber, sheep and rabbit skins, preserved fish, New Zealand flax, rabbits, preserved milk, and agricultural implements.

Accommodation.—There is no bar at the entrance of the harbour and the approach is well lighted. There are two channels leading into and out of the harbour. The principal of these runs north and south, the other east and west. On the western side of the entrance, north and south of Starling Point, and under the shelter of the promontory of the "Bluff," there is a large area of sheltered water, the depth varying from 3 to 6 fathoms at low water, with good holding ground for anchorage. There is sufficient water for the largest vessels, there being a depth of 24 ft. at low water about

New Zealand—Bluff Harbour (continued).

a mile inside the entrance. The wharves are lighted by electricity, and shipping can be carried on as well by night as by day. The water area of the port is 1,280 acres. The depth at the entrance at ordinary springs is 54 ft. at high water, and 48 ft. at low. The Harbour Board's wharf is 1,760 ft. long with a depth alongside at ordinary springs of from 24 to 35 ft. at high water, and from 17 to 28 ft. at low water. There is good anchorage for vessels under 1,000 tons.

Pilotage.—Compulsory. **Steamers** :—Inwards and outwards, $2\frac{1}{2}d.$ per registered ton. In and out, payable yearly, $5d.$ per registered ton. On application by the master or agent of a foreign-going steamer, ordinary charges for pilotage, port charges, and berthage may be suspended, and a charge of $5s.$ per ton for inward cargo, and $10s.$ per ton for outward cargo, may be substituted, with a minimum charge of £50. Steamers calling more than once on the same voyage are only charged one inward and outward pilotage. **Sailing Vessels** :— $4\frac{1}{2}d.$ per registered ton inwards and outwards if a tug is not employed. Employing tug, $2\frac{1}{2}d.$ per registered ton, inwards and outwards. In ballast, $2\frac{1}{2}d.$ per registered ton in and out. Payable yearly, $9d.$ per ton, in and out.

Towage :—From sea to wharf, or vice versa, $5d.$ per reg. ton. Vessels in ballast, inwards or outwards (including pilotage), $6d.$ per reg. ton. Minimum rate for towage, £3. For each move in the harbour, $1d.$ per reg. ton, with a minimum charge of £1 10s. **Towage Assistance** :—For steamers using their own motive power: Over 3,000 tons, £5; over 2,000 tons, £4; under 2,000 tons, £3. Maximum charge for berthage dues, pilotage, and port charges, £180 in any one visit.

Port Charges.—On all vessels, per trip, $2d.$ per reg. ton, but no vessel to pay more than $6d.$ per reg. ton in any six months from the date of entry. **Light Dues** :— $6d.$ per reg. ton on vessels from America or Europe; $4d.$ per ton from the Australian colonies; $\frac{1}{4}d.$ per ton coastwise. **Stevedores** :—About $1s. 3d.$ per hour, and $2s.$ per hour overtime. **Ballast** :— $4s. 6d.$ per ton, free alongside. **Berthage** :—*Steamers*, $2d.$ per net reg. ton for the first day, and $1d.$ per ton per week or part of a week. *Sailing vessels*, over 50 tons reg., $1d.$ per ton net reg. per week for the first four weeks, and $\frac{1}{4}d.$ per week after. **Water** :—For boilers, $1s. 6d.$ per ton. Drinking water, $2s.$ per ton, with a minimum charge of $2s. 6d.$ (Hydraulic winch and driver as per arrangement.)

Pro Forma Charges on a vessel of 5,114 tons net reg. :—

	£	s.	d.
Port charges	42	12	4
Pilotage, in and out	106	10	10
Berthage dues	42	12	4
Tug assistance	5	0	0
	<hr/>		
	£196	15	6
Less refund to reduce above, exclusive of towage, to a maximum of £180	11	15	6
	<hr/>		
	£185	0	0
	<hr/>		

DUNEDIN.

Dunedin, or Otago Harbour, is in lat. $45^{\circ}53'$ S., long. $170^{\circ}30'$ E. Distance by sea from Liverpool, 12,120 miles.

Population.—With suburbs, 56,020.

New Zealand—Dunedin (*continued*).

Exports.—Gold, wool, timber, potatoes, grain, frozen mutton, and beef.

Accommodation.—The average depth in the entrance channel at low water springs is 32 ft. Inside the Heads, in the New Cut, there is 22 ft. at low water springs. Mean rise at high water, 5 ft. 6 in. Within the Heads, the harbour extends S.W. for 11 miles. 7 miles within the Heads, two adjacent and lofty islands extending across the harbour form a natural division, above which is the Victoria Channel, which is 18 ft. deep at low water springs. Vessels up to 21½ ft. discharge at Dunedin wharves. There is a stone dry dock with a length, over all, of 348 ft., width of entrance 50 ft., depth on the sill at high water ordinary springs, 19½ ft.

There is 6,079 ft. of wharfage, with 15 to 20 ft. at low water, with shed accommodation of 97,000 sq. ft. There is a crane to lift 3 tons and five steam cranes to lift from 3 to 7 tons. Large repairs can be executed here.

There are licensed adjusters of compasses at Otago, and special conveniences for swinging vessels have been fitted. Fees as follows :—For vessels up to 200 tons, 30s. ; 201 to 700, 42s. ; 701 to 1,200, 63s. ; 1,201 to 2,000, 84s. ; over 2,000, 105s.

Pilotage.—Compulsory. Steamers—4*d.* per ton, inwards and outwards. Steamers calling twice on one voyage are only charged once. Sailing vessels—Inwards and outwards, 6*d.* per ton without tug, and 4*d.* per ton with tug. A charge is made of 15*s.* per day for the first three days, and 10*s.* per day after for any period that a pilot is detained on board. **Towage :**—Assistance to vessels under steam, one-fourth the usual towage, not exceeding £5 for upper harbour, and £7 for lower harbour.

Port Charges.—2*d.* per ton, but not to exceed 6*d.* per ton half-yearly. On application of the master or agent of any foreign-going steamer visiting the port, the ordinary charges for pilotage and port charges will be suspended, and a charge of 5*s.* per ton on cargo, as per ship's manifest, discharged, and 10*s.* per ton on cargo loaded, will be substituted, with a minimum charge of £50. **Harbour-master's Fees :**—Vessels up to 120 tons, 10*s.* Over 120 tons, 1*d.* per ton. The maximum charges on any one vessel for port charges, pilotage, and harbour-master's fees, both inwards and outwards, shall not exceed £180 on any one visit, and a foreign steamer calling twice at the port on one voyage shall not exceed £200. **Berthage :**—For steamers and sailing vessels, ¼*d.* per ton net reg. per day or part of a day, with a maximum charge of £15, and a minimum charge of 1*s.* per day or part of a day. **Light Dues :**—Sailing vessels from ports beyond the Australian colonies, 6*d.* per reg. ton. All steamers from ports beyond New Zealand, and sailing vessels from the Australian colonies, 4*d.* ; steam and sailing vessels coastwise, ¼*d.* **Entrance and Clearance :**—£3 3*s.* **Use of Steam Crane :**—3*s.* 6*d.* and 4*s.* 6*d.* per hour, according to power. **Coal :**—About 2,000 tons kept in stock. **Ballast :**—3*s.* per ton. **Water :**—3*s.* per ton. **Provisions :**—Beef and mutton, 3*d.* per lb. **Harbour Improvement Rate :**—A rate of from 3*s.* to 5*s.* per ton is levied upon imports, and from 2*s.* to 3*s.* upon exports. **Stevedore :**—Discharging general cargo, 1*s.* per ton up to lifts of 2 tons. Timber, approximately 5*d.* per 1,000 sup. ft. **Labourers :**—On the wharf, 1*s.* 3*d.* per hour during the day (8 a.m. to 5 p.m.), and 2*s.* per hour overtime. Working coal, 1*s.* 6*d.* per hour in the daytime, and 2*s.* per hour overtime. **Tally Clerks' Fees :**—10*s.* per day or part of a day.

New Zealand—Dunedin (*continued*).

Overtime, 2s. 6d. per hour. **Harbour Dues on Transhipment**:—1s. per ton weight or measurement at Harbour Board's office. **Customs Overtime**:—After 4 p.m. or before 8 p.m. on holidays and Sundays, 3s. 6d. per hour. Work is prohibited on Sundays except under exceptional circumstances when Collector of Customs permit must be obtained. **Water**:—Supplied by the Dunedin City Corporation at the wharf at 1s. 6d. per ton. **Cartage**:—Within a half-mile radius of the wharves, 1s. 3d. per ton weight, and 1s. per ton measurement.

Pro Forma Charges on a steamer of 2,000 tons, from a foreign port, discharging 4,000 tons of general cargo:—

	£	s.	d.
Pilotage inwards	33	6	8
„ outwards	33	6	8
Light dues	50	0	0
Berthage, 7 days	14	11	8
Port charges	16	13	4
Water, 2,000 tons	150	0	0
Cartage, 1,000 tons at 1s. 3d.	62	10	0
Customs overtime	1	15	0
Stevedore, discharging 4,000 tons.	200	0	0
Labourers, 10 men for 7 days	35	0	0
Tally clerks	3	10	0
Entrance and clearance	3	3	0
	£603	16	4

FOXTON.

Foxton is in lat. 40°28' S., long. 175°18' E.

Population.—1,200.

Exports.—Fibre and wool.

Accommodation.—There is a depth of 5 ft. on the bar at low water. Springs rise 8 ft.; neaps 6 ft. Vessels drawing 9 ft. may enter at high water, spring tides, and 7 ft. neaps, and proceed 50 miles up the river.

Port Charges.—Light, pilotage, and harbour-master's dues are the same as at Wanganui.

GISBORNE.

Gisborne, in lat. 38°37' S., long. 178°1' E., lies at the head of Poverty Bay, on the west bank of the Taranganui River.

Population.—5,664.

Imports.—Cotton and woollen fabrics, hardware, boots, wines, spirits, beer, silks, tobacco, etc.

Exports.—Wool, frozen meat, dairy produce, hides, skins, tallow, cereals, sulphuric acid, and gold.

Accommodation.—The inner harbour has been greatly improved during the last few years, so that steamers 186 ft. long, drawing 10 ft. 6 in., can discharge their cargo at the wharf. Vessels drawing 11 ft. can get to the wharf at high tide, and those drawing 8 ft. 6 in. can get in or out two hours before or after high water. There is about 2,000 ft. of wharfage, with a depth of from 7 to 8 ft. alongside at low water. There is a slip for vessels

New Zealand—Gisborne (*continued*).

of about 150 tons. In the outer anchorage a fairly good berth may be obtained in any suitable depth to the N.W. of Young Nicks Head. The holding ground is good, and vessels are safe with S.W. or S. winds, although with the latter a considerable swell is sometimes encountered. Poverty Bay affords no shelter with S.E. winds blowing. Sailing vessels awaiting cargo should anchor in not less than 10 fathoms W. of the leading lights, and S. of the Foul Grounds, in order to have sufficient room for getting under way. Steamers anchor in from 5 to 7 fathoms, near the intersection of the two lines of leading lights, a good scope of cable being always given. Springs rise 6 ft. to 7 ft.; neaps range 3 ft.

Pilotage.—Optional, but if a vessel applies for a pilot, the services must be paid for, whether rendered or not, at the following rates:—**In or out of the Taranganui River:** Sailing vessels, 4*d.* per ton net reg. in, and half rates out. Steamers, 3*d.* per ton net reg. in, and half rates out. **To the Roadstead:** Sailing vessels, 6*d.* per net reg. ton for the first 100 tons, and for every reg. ton over, 2*d.* per ton inwards. Outwards, half rates. Steamers: For the first 100 tons reg. or under, 3*d.* per ton inwards; and for every ton reg. over 100 tons, 1*d.* per ton. Outwards, half rates.

Port Charges.—Vessels plying within the port only, 3*d.* per net ton reg., payable quarterly in advance. All other vessels, 2*d.* per net ton reg. on arrival, but no vessel pays more than 1*s.* per net ton reg. in any half year. Ocean-going vessels, not being colonial trading vessels, leaving and returning to the port within one calendar month of their first entry, are exempt from port charges in respect of the second or subsequent arrivals during such period of one calendar month. **Harbour-master's Fees:**—For mooring, berthing, etc., sailing vessels, 60 tons and upwards, 1*d.* per net ton reg.; steamers of more than 60 tons reg., but less than 120 tons reg., 10*s.*; steamers of 120 tons reg. and upwards (to roadstead only), 1*d.* per ton reg., but not more than 6*d.* per ton reg. in any half year; steamers of 120 tons reg. and upwards, entering the Taranganui River, 1*d.* per ton reg. on arrival.

Wharfage:—Consignees are liable for wharfage charges on inward cargo, and consignors on outward cargo. Cargo for transshipment brought into port, whether landed on the wharf or transhipped into a vessel alongside, must pay half wharfage rates. Cargo for other ports, landed on the wharf, for convenience in discharging Gisborne cargo, pay quarter rates, providing the same is re-shipped in the same vessel. Coal, brought into the river and stored in lighters, must pay half wharfage rates, but should the same be subsequently landed full rates must be paid. **Lay-days:**—Vessels with full cargoes can occupy berths at the wharves for discharging, exclusive of Sundays, holidays, and day of removal, as under:—

		Sailing Vessels.	Steamers.
Up to 100 tons		2 days.	2 days.
From 101 to 200 tons		3 ..	2 ..
.. 201 .. 300 ..		5 ..	3 ..
.. 301 .. 400 ..		6 ..	3½ ..
.. 401 .. 500 ..		7 ..	4 ..
.. 501 .. 600 ..		7 ..	4½ ..
.. 601 .. 700 ..		8 ..	4½ ..
.. 701 .. 800 ..		8 ..	5 ..

and so on at the rate of one day additional for every 100 tons reg. of the vessel. Vessels with only part cargo are allowed time in the proportion

New Zealand—Gisborne (*continued*).

which such part cargo bears to a tonnage, equal to one and a half times their reg. tonnage. One day extra for every 100 tons reg. may be allowed if the berth is not wanted, on payment of $\frac{1}{2}d.$ per reg. ton per day. Steamers pay double. Double time is allowed for loading, and extra time is allowed on payment of half extra payments for discharging. Vessels discharging over the decks of other vessels are allowed double time, and loading in like circumstances, three times. Vessels loading or discharging ballast are allowed one day for every 40 tons. **Water**:—For drinking, 2s. per 250 gallons or fraction thereof. For boilers, 1s. per 250 gallons, or fraction thereof, with a minimum charge of 2s.

GREYMOUTH.

Greymouth, in lat. $42^{\circ}29'$ S., long. $171^{\circ}15'$ E., is situated at the mouth of the Grey River, 24 miles from Hokitika.

Population.—About 5,500.

Imports.—General merchandise.

Exports.—Coal, gold, and timber.

Accommodation.—The depth of water on the bar ranges from 4 ft. at low water springs to 24 ft. at high water springs. There is no anchorage in the river, but in the roadstead there is good holding ground in 10 to 15 fathoms on sandy bottom. There is 2,700 ft. of wharfage along the river front, and an additional 2,000 ft. is in course of construction in the tidal dock. Depth of water alongside, 23 ft. at high water ordinary springs, and 14 ft. at low water springs. The north breakwater extends 1,400 ft., and the south 3,540 ft. seaward from the mouth of the river, the entrance between being 500 ft. wide, and the river 450 ft. Vessels 250 ft. in length and 14 ft. draught, or 300 ft. long and 12 ft. draught, can swing in the river at high water. The merchandise and coal wharf, which is situated on the N. bank of the river, is 2,770 ft. long, and has a minimum depth of from 12 to 16 ft. alongside at low water. Two large sheds are provided for the storage of cargo, and a double railway line runs the length of the wharf, thus enabling vessels to discharge direct into railway trucks. There are three steam cranes to lift from $1\frac{1}{2}$ to 12 tons, for the loading and discharging of cargo or ballast, and two 10-ton fixed, and one 12-ton travelling, hydraulic cranes for the loading of coal, the average rate of loading being 100 tons per hour with one crane, or double that quantity with two cranes. Steamers can load 60,000 ft., and sailing vessels 20,000 ft., of timber per day of eight hours.

Pilotage.—Not compulsory. Steamers—4d. per ton. Sailing vessels—6d. per ton. **Towage**:—Steamers of 800 tons reg. and over, in or out, £20. Steamers of 300 tons and under 800 tons reg., in or out, £15. Steamers under 300 tons reg., in or out, £10. Sailing vessels, 1s. 6d. per reg. ton, in or out. Maximum charge, £30; minimum, £7 10s.

Pilotage is not charged if towage is paid for.

Port Charges.—**Light Dues**:—Foreign vessels, 4d. per ton reg. Ballast vessels, $\frac{1}{2}d.$ per reg. ton. **Tonnage Dues**:—Vessels in ballast, 1d. per reg. ton; vessels with one-eighth cargo, $\frac{3}{4}d.$ per reg. ton; if one-fourth loaded, $1\frac{1}{2}d.$ per reg. ton; if one-half, 3d. per reg. ton. If more than one-

New Zealand—Greymouth (*continued*).

half loaded, 6*d.* per reg. ton, with a maximum charge of £5 10*s.* **Entrance and Clearance Fees** :—£1 1*s.* in and the same out. **Boat Hire** :—By private agreement, but seldom necessary. **Ballast** :—Shingle ballast, 3*s.* 9*d.* per ton f.o.b. Discharging ballast by steam crane, and removal, 1*s.* 6*d.* per ton. **Labour** :—1*s.* 6*d.* per hour ordinary, and 2*s.* per hour overtime or for trimming coal. **Warps** :—If used, £1 per warp. **Brokerage** :—2½ per cent on freight list.

Pro Forma Charges on a steamer of 800 tons reg., inward with 400 tons of general cargo, and drawing 16 ft. loaded :—

	£	s.	d.
Tonnage dues, maximum	5	10	0
Pilotage inwards	13	6	8
„ outwards	13	6	8
Light dues at 4 <i>d.</i> per ton reg.	13	6	8
Entrance and clearance	2	2	0
Ballast, 100 tons at 3 <i>s.</i> 9 <i>d.</i>	18	15	0
Labour, 6 men for 4 days	14	8	0
Warps	2	0	0
	<hr/>		
	£82	15	0

MOKAU RIVER.

Mokau River lies on the west coast of the North Island, and about 3 miles north of New Plymouth by water.

Population.—About 300.

Imports.—General merchandise and timber.

Exports.—Timber, coal, wool, and flax.

Accommodation.—The Mokau River is about 150 ft. wide at the mouth, with an average depth of water on the bar of 10 ft. 6 in. It is navigable for 25 miles, the coal mines being 23 miles up the river. Small steamers take coal regularly to Waitara and New Plymouth from these mines. Depth at low water, 1 ft. 6 in.

Port Charges.—Harbour Dues :—2*d.* per reg. ton. **Harbour Improvement Rate** :—Coal, 3*d.* per ton. Timber, 1*d.* per 100 ft. Other goods, 2*s.* per ton. **Berthage** :—Steamers, 2*d.* per ton. Sailing vessels, 3*d.* per ton. Other charges according to agreement.

NAPIER.

Napier is in lat. 39°30' S., long. 176°52' E.

Population.—About 10,000.

Imports.—General merchandise.

Exports.—Wool, frozen meat, flax, hemp, and tow.

Accommodation.—The inner harbour of Port Napier (Ahuriri) is only available for vessels drawing up to 14 ft. The entrance is 400 ft wide, but inside it broadens into Ahuriri Lake, a large sheet of shallow water. Vessels are taken in and out of the harbour at slack water. The outer harbour will, when completed, form a valuable haven for large ships, with depth of not less than 26 ft. at low water springs. The eastern breakwater

New Zealand—Napier (*continued*).

is now (1908) completed for 2,645 ft. and affords shelter from S. winds. A loading and discharging wharf projects for 400 ft. (but will reach 450 ft. when completed in 1909) from the breakwater wharf, which latter is 1,200 ft. long. The railway runs along these wharves, which have a depth of 16 ft. alongside. Tides rise and fall about 4 ft. 6 in. In the roadstead there is accommodation for vessels of any size and draught. The best anchorage is in 6 to 7 fathoms, on good holding ground, near the mooring buoy, about 1 mile off the inner harbour entrance. The road is safe in S., S.W., and N.W. winds, and during the ordinary summer N.E. sea breezes. Black north-easters give ample warning of their approach. A heavy swell, however, is often felt, even with off-shore winds, and sometimes causes strain in the cables. Vessels making for Napier harbour should keep well outside the buoys marking the breakwater works and the Auckland Rock. There are two cranes to lift from 8 to 15 tons each. There is a patent slip with a lifting power of 129 tons. Small repairs can be executed.

Pilotage.—Optional, but if a pilot is applied for he must be paid whether he renders service or not, at the following rates :—**Into the Inner Harbour :** Sailing vessels, 4*d.* per ton reg. Outwards, half rates. Steamers, 4*d.* per ton reg. Outwards, half rates. **Into the Breakwater Harbour or to the Roadstead :**—Sailing vessels, for first 100 tons reg., 6*d.* per ton, and for every ton reg. over 100 tons, 2*d.* per ton. Outward, half rates. Steamers, for first 100 tons reg., 3*d.* per ton, and for every ton reg. over 100 tons, 4*d.* per ton. Outwards, half rates. All outward pilotage must be paid either before or at the time when the application for a pilot is made. **Towage :**—First 100 tons, 6*d.* per ton ; balance, 2*d.* per ton.

Port Charges.—**Light Dues :**—All sailing vessels, other than colonial trading vessels and coasters, 6*d.* per ton. Intercolonial trading sailing vessels and all steamers except coasting steamers, 4*d.* per ton. Coasting vessels, either steam or sailing, 1*d.* per ton. **Harbour Dues :**—Vessels lying within the port only, 6*d.* per ton reg., payable quarterly in advance. All other vessels, 2*d.* per ton reg., but no vessel will have to pay more than 4*s.* per ton reg. in any half-year. Ocean-going vessels, not being colonial trading vessels, visiting the port twice within the period of 30 days, shall be exempt from port charges in respect of the second or subsequent arrival. **Harbour Improvement Rate :**—3*d.* per ton on cargo landed, shipped, or transhipped. **Harbour-master's Fee :**—Including mooring, berthing, etc., 4*d.* per ton net reg. If a pilot is taken inwards, this charge is not enforced. **Lay days and Wharfage Regulations :**—Same as at **Gisborne.** **Boat Hire :**—Oil launches, 10*s.* per hour for the first hour, 7*s.* 6*d.* per hour after. **Ballast :**—4*s.* 6*d.* per ton, f.o.b. alongside a wharf. **Labour :**—1*s.* 6*d.* per hour ordinary time ; overtime, 2*s.* 1*d.* per hour. **Use of Fenders :**—Vessels of 2,000 tons, £1 per day, and 5*s.* per day for every additional 1,000 tons. **Hire of Hawsters :**—1*d.* per ton per day. **Water :**—For drinking, 2*s.* per 250 gallons or fraction thereof. For boilers, 1*s.* per 250 gallons, or fraction thereof. **Mooring Buoys :**—1*d.* per ton per day. **Brokerage :**—5 per cent. on chartering and disbursements. **Entrance and Clearance :**—From £1 1*s.* to £15 15*s.* according to the size of the vessel. No wharfage or Consular fees.

Pro Forma Charges on three steamers as per the particulars detailed below :—

New Zealand—Napier (*continued*).

	(1)	(2)	(3)
	On a Steamer of 2,000 tons net reg., with a cargo of 150 tons in and 50 tons out, dis- charging and load- ing in the Inner Harbour. Vessel drawing 14 ft.	On a Steamer of 2,000 tons net reg., with a cargo of 500 tons in and 100 tons out, dis- charging and load- ing at the Break- water Harbour. Vessel draws 24 ft.	On a Steamer of 4,500 tons net reg., with a cargo of 800 tons in and 600 tons out, dis- charging and load- ing in the Road- stead. Vessel draws 30 ft.
	£ s. d.	£ s. d.	£ s. d.
Pilotage inwards	6 5 0	9 3 4	19 11 8
„ outwards	3 2 6	4 11 8	9 15 10
Port charges	4 3 4	16 13 4	37 10 0
Harbour improvement rate	2 10 0	7 10 0	17 10 0
Water, 10 ton (drinking)	1 0 0	1 0 0	1 0 0
„ 40 ton (boilers).	2 0 0	2 0 0	2 0 0
Fenders, six days	—	6 0 0	10 10 0
Hawsers, six days	—	12 10 0	28 2 6
Mooring buoys, six days	—	6 5 0	14 1 3
Light dues (Government tax)	8 6 8	33 6 8	75 0 0
	£27 7 6	£99 0 0	£215 1 3

NELSON.

Nelson is situated in lat. 41°12' S., long. 173°20' E., at the bottom of Blind Bay, and 90 miles W. of Wellington.

Population.—About 8,000.

Imports.—General merchandise and coal.

Exports.—Wool, gold, flax, hops, and grain.

Accommodation.—The original entrance to the harbour is practically closed, being only now used by small craft. A new entrance has been cut through the boulder bank, which can already be used by vessel of up to 1,500 tons burden, but it is still in course of construction, and when completed will have a top width of 450 ft., bottom width of 350 ft., and capable of taking a vessel of 450 ft. in length, with a maximum draught of 23 ft. Good anchorage is to be had outside the bar in from 5 to 6 fathoms. There is a wharf 300 ft. long available for shipping on both sides. It can be reached by vessels drawing not more than 18 ft. There is a ballast crane to discharge 20 to 30 tons per hour; two other cranes to lift 5 to 10 tons each sheer legs to lift 10 tons. The holding ground in the harbour is good. A patent slip takes vessels up to 150 tons. Vessels of the largest tonnage can be beached for repairs.

Pilotage.—Compulsory. Steamers—1*d.* per reg. ton in, and the same out. Sailing vessels—3*d.* per reg. ton in, and the same out. Minimum charge, each way (in all cases), £1. **Towage:**—Small steamers available for towing at the following rates: 100 tons, £3; 101 to 200, £4; 201 to 250, £5 10*s.*; 251 to 300, £7; 301 to 350, £8; 351 to 400, £9; 401 to 500, £10; 501 to 600, £11; 601 to 700, £12; 701 to 800, £14; 801 to 900, £16 10*s.*; 901 to 1,000 tons, £20. When the tug is taken both ways, on third is deducted from the second tow.

Port Charges.—Vessels not paying pilotage, pay as follows: Upon first arrival, half-yearly, vessels under 100 tons reg., 6*d.* per ton

New Zealand—Nelson (continued).

Vessels over 100 tons, 1s. per ton. **Light Dues**:—See **New Zealand.**
Harbour-master's Fees:—For each removal of any steamer or sailing vessel within the harbour: Vessels of 120 tons and upwards, 1d. per ton; vessels less than 120 tons, 10s. **Stevedore**:—Discharging sailing vessels, about 1s. per ton. **Ballast**:—About 3s. per ton. **Labour**:—1s. 3d. per hour, and 6s. 6d. per hour overtime. **Water**:—4s. per 1,000 gallons.

NEW PLYMOUTH.

New Plymouth, in lat. 39°5' S., long. 174°6' E., is situated near the Sugar-baf Islands, and about 150 miles from Auckland, via Manukau.

Population.—About 12,000.

Imports.—General merchandise of all kinds.

Exports.—Butter, cheese, cattle, and sheep.

Accommodation.—Vessels anchor in the open roadstead in a depth of 8 fathoms at low water, open to all winds from E.N.E. round N. to W. There is no bar. The port is partly protected from S.W. winds by a breakwater which extends 1,500 ft. seawards. From the breakwater, a wharf, 600 ft. long, projects inshore; this has a depth of 22 to 25 ft. at its outer end, which is 165 ft. off the breakwater. In fine weather, berthing for four steamers is available. Rise and fall of the tide, 8 to 12 ft. Vessels load and discharge direct into railway trucks, and there are two cranes, one to lift 40 tons and the other 3 tons.

Pilotage.—Compulsory both inwards and outwards. Ocean-going steamers and sailing vessels, $\frac{1}{2}$ d. per ton, in or out. Intercolonial or coasting steamers, $1\frac{1}{2}$ d. per ton; sailing vessels, 3d. per ton.

Port Charges.—Payable half-yearly: Intercolonial, 4d. per ton. Foreign-going vessels, $\frac{1}{2}$ d. per reg. ton on arrival in the roadstead. **Berthage**:— $\frac{1}{2}$ d. per reg. ton for vessels, and $3\frac{1}{2}$ d. per ton of cargo landed or shipped. **Warps**:—1d. per reg. ton for the first 100 tons, and $\frac{1}{2}$ d. for every additional ton. **Labour**:—1s. 6d. per hour; 2s. per hour overtime. **Ballast**:—2s. 6d. per ton. **Water**:—5s. per 1,000 gallons.

Pro Forma Charges on a steamer of 1,269 tons reg., with 156 tons of general cargo in, and ballast out, drawing 20 ft. loaded:—

	£	s.	d.
Harbour dues	2	12	11
Berthage	2	12	11
„ landing 156 tons cargo	2	5	6
Warps	2	17	1
Pilotage	5	5	9
Labour, 6 men for 2 days	7	4	0
Ballast, 156 tons	19	10	0
Water, 2,000 gallons	0	10	0
	£42	18	2

OAMARU.

Oamaru is in lat. 45°6' S., long. 170°59' E.

Population.—About 6,000.

Imports.—General merchandise.

Exports.—Wool, frozen meat, grain, etc.

Accommodation.—The harbour, 60 acres in extent, is perfectly

New Zealand—Oamaru (continued).

safe, being enclosed by a substantial breakwater and mole, and sheltered from the strongest S.E. winds by a bluff headland, Cape Wanbrow, on which there is a lighthouse and signal station. There is no bar at the entrance, which has a depth of 17 ft. 6 in. at low water, and 22 ft. 6 in. at high water ordinary springs. The entrance is 400 ft. wide, and is overlapped by the breakwater 350 ft., so that ships entering or leaving the port do so in still water. There are three wharves. Sumpter Wharf belongs to the Harbour Board. It is 360 ft. long on the E. side and 340 ft. long on the W. side. This wharf can be reached at high water ordinary spring tides by vessels drawing 20 ft. Normandy Wharf belongs to the Harbour Board. It is 240 ft. long on the E. side, and 270 ft. long on the W. side. The wharf can be reached at high water, ordinary springs, by vessels drawing 10½ ft. Private Wharf; length 628 ft. This wharf can be reached by vessels drawing 16 ft. at high water ordinary springs. There is a much greater depth of water alongside the wharves than is available at their approach. There are three steam cranes on the wharves. Moorings have been laid down in the harbour. Cargo can be received or discharged into railway trucks alongside the ships.

Port Charges.—Tonnage Rate :—Coal, general merchandise, stone grain, produce, and timber, 8*d.* per ton. Wool, 2*s.* per ton. Frozen sheep and lamb, 1*d.* per carcass. Rabbits and hares, 3*s.* per ton, gross weight. All other frozen goods, 3*s.* per ton gross dead weight. (The above tonnage dues are in lieu of the usual port dues, pilotage, and berthage dues.) **Use of Warps :—**½*d.* per reg. ton per day for seven days, and ¼*d.* per ton per day after, up to six weeks. After that period, ⅓*d.* per ton per day is charged. **Light Dues :—**See **New Zealand.** **Entrance Fees :—**£3 3*s.* **Clearance Fees :—**£3 3*s.* **Labour :—**1*s.* 3*d.* per hour (day). **Brokerage :—**2½ per cent. **Water :—**At the wharves, 2*s.* 6*d.* per ton.

Pro Forma Charges on a steamer of 4,243 tons reg., from another port in New Zealand, loading cargo at Oamaru :—

	£	s.	d.
Light dues at ¼ <i>d.</i> per ton	4	8	5
Tonnage dues—			
5,555 carcasses mutton and lamb at 1 <i>d.</i>	23	2	11
18 cases kidneys = 1 ton at 3 <i>s.</i>	0	3	0
112 bales wool = 28 tons at 2 <i>s.</i>	2	16	0
28 cases tallow = 11 tons at 8 <i>d.</i>	0	7	4
Warp hire, 2 days at ½ <i>d.</i> per ton per day	17	13	6
Stevedore	31	14	0
Tally clerks	1	4	9
Overtime, 6 railway men 2½ hrs. at 1 <i>s.</i> 6 <i>d.</i> , and 4 men 2 hours at 1 <i>s.</i> 6 <i>d.</i>	1	14	6
Dumping 112 bales wool at 1 <i>s.</i> 9 <i>d.</i>	9	16	0
Wharfage and haulage, 112 bales at 2 <i>d.</i>	0	18	8
Water for boilers at 2 <i>s.</i> per ton	2	10	0
	£96	9	1

OPUNAKE.

Opunake, in lat. 39°27' S., long. 173°53' E., is situated 50 miles from New Plymouth.

Population.—406.

Imports.—General merchandise.

Exports.—Wool and colonial produce.

Accommodation.—Vessels find good anchorage in the bay, b

New Zealand—Opunake (*continued*).

it is open to south-westerly winds. A heavy swell sets in. There is a depth of 6 fathoms at high water, and 4 fathoms at low water, the wharf having a depth of 22 ft. alongside at high water, and 10 ft. at low water. Depth at lowest spring tides, $3\frac{1}{2}$ fathoms.

Pilotage.—Nil.

Port Charges.—Wharfage and Lighterage, 8s. 4d. per ton.

PATEA.

Patea, in lat. $39^{\circ}44'$ S., long. $174^{\circ}31'$ E., is 26 miles N.W. of Wanganui

Population.—835.

Imports.—Coal and general merchandise.

Exports.—Cheese, butter, meal, wool, hides, beef, mutton (frozen and tinned), flax, fungus, tallow, etc.

Accommodation.—On the east side of the entrance to the Patea River, a breakwater 1,100 ft. long and 20 ft. wide has been constructed, which serves to keep the channel straight and the bar from shifting. The breakwater is being extended a further 200 ft. seawards, and a groin has been constructed on the W. side of the river 500 ft. long, giving greater depth by confining the flow. A breakwater has also been built W. of the groin, extending 600 ft. seawards. The depth on the bar at spring tides is from 14 to 15 ft., with an average rise and fall of 10 ft. Depth at neap tides, 8 to 9 ft. In moderate weather vessels can approach safely within signalling distance, and come to anchor in 6 to 7 fathoms of water, but a good crown rope should be attached to the anchor, as it is foul ground in places. The river from the bar up to the wharves and bridge is very good. There are two wharves, one on the west side, belonging to the Harbour Board, and one on the east, each capable of discharging 200 to 240 tons per day.

Pilotage.—Compulsory. 1d. per reg. ton, in and out.

Port Charges.—3d. per reg. ton each three months. **Light Dues :**—See **New Zealand.** **Berthage :**—6d. per ton on cargo as per ship's manifest. **Wharfage :**—2s. per ton on all cargo landed or shipped. **Water :**—1s. or 2s. 6d. per 1,000 gallons, according to class. **Labour :**—1s. 6d. per hour, and 2s. 6d. per hour overtime. **Ballast :**—Free ; 1s. per ton for cartage.

PICTON.

Picton, in lat. $41^{\circ}16'$ S., long. $174^{\circ}3'$ E., is situated at the head of Queen Charlotte Sound, and is the principal port of Marlborough.

Population.—About 1,000.

Imports.—Coal and merchandise.

Exports.—Wool, grain, hemp, frozen mutton, etc.

Accommodation.—Picton has a fine harbour, capable of accommodating the largest vessels, and good anchorage is to be had in 6 to 9 fathoms close to the shore. There is a wharf 450 ft. long, which extends into 26 ft. at low water, 32 ft. at high water, and 35 ft. 6 in. at lowest spring tides, with railway lines the whole length. A new jetty, 600 ft. long by 60 ft. wide, giving an average depth of 30 ft. at low water, is now in course of construction, and it is the intention of the Government to erect two more jetties

New Zealand—Picton (*continued*).

of similar size, giving an average depth of 40 ft. It is also proposed to erect new wharves in the S.W. portion of the harbour. There is a hand travelling crane to lift 5 tons.

Port Charges.—**Water** :—Excellent water may be obtained from the wharf at 6s. 8d. per 1,000 gallons. **Wharfage** :—Up to 150 tons, $\frac{1}{2}$ d. per ton, and $\frac{1}{4}$ d. per ton for every ton additional. **Boat Hire** :—When assisting boats to moor, £1. **Light Dues** :—See **New Zealand**.

PORT LYTTTELTON.

Port Lyttelton, in lat. 43°35' S., long. 172°45' E., is situated on the N.W. side of the Banks Peninsula, having an opening to the N.E. It is the principal seaport of the provincial district of Canterbury, being only seven miles distant from the capital, Christchurch.

Population.—3,941.

Imports.—General merchandise.

Exports.—Frozen meat, wool, hides, skins, tallow, grain, etc.

Accommodation.—Port Lyttelton is very easy of access in most weathers, except for sailing vessels in S.W. gales, which draw out with great violence. It is somewhat open to E. winds, but gales from that quarter are not of frequent occurrence, N.E. and S.W. being the prevailing winds. The outer harbour is open, and at times subject to considerable swell. The anchorage is good. Vessels using the outer anchorage should anchor fully three-quarters of a mile outside Shag Reed, with Officer Point bearing N. 31° W. ; this will be in 3½ fathoms at low water, with good holding ground (mud and sand), at a distance of 4 to 5 cables off the Eastern Breakwater. A good berth for large vessels is in 5 fathoms, with Ripa Island S. 5° W. and Sticking Point S. 70° W. No vessel is to anchor with the end of the Eastern Breakwater bearing N. of N. 45° W. As the greater part of the bottom is composed of very soft mud, ships are liable, during strong N.E. winds, to drag their anchors. It is recommended at such times to be at single anchor with a long scope of cable—60 to 70 fathoms—rather than to moor. A second anchor should always be ready. The water area enclosed within the breakwater is about 107 acres. The present depth of water inside and at the various wharves varies from 20 up to 27 ft. at low tide. A large portion of the inner harbour has been deepened by dredging, so that vessels drawing 28 ft. can leave it at high water. A channel has also been dredged from the outer harbour to the entrance between the moles to a depth of 24 ft. at low water, or 28 ft. at high tide. The rise of the tide is about 6½ ft. spring tides, and 4½ ft. neap tides. Vessels of over 10,000 tons can now enter and be safely berthed at several of the wharves.

Two beacons have been erected for leading lights as a guide to enable deep draught ships to keep in the dredged channel. The front beacon is about 3 cables off the harbour entrance in 20 ft. of water, and the back beacon (which is higher than the front one) is on the Shag Reef. A red light is shown from the front beacon, and a white light from the back one ; these beacons in line with one another bear S. 65° W., marking the centre of the dredged channel. Two smaller beacons have been erected for indicating when to turn up towards the harbour entrance. There are no lights on these beacons, as the turning point is indicated at night by the red breakwater

New Zealand—Port Lyttelton (continued).

light showing at this point, having been screened on the previous bearings. There is a total of 12,437 ft. of timber wharf frontage, consisting of Gladstone Pier, 1,909 ft. long; timber breastworks from Gladstone Pier westward to Naval Point, 2,990 ft., and seven jetties, having a total length of 7,538 ft. The total berthage accommodation served by railway lines is 9,550 ft. Ocean steamers can be berthed at Nos. 2, 3, 5, 6, and 7 jetties.

There is a dry dock 503 ft. long over all, 60 ft. wide at the entrance at the ordinary high spring level, and 23 ft. on the sill at high ordinary springs. The depth can be increased to 24 ft. by altering the blocks. There is a patent slip with a lifting power of 300 tons; ten movable ballast cranes capable of discharging 28 tons per hour; two other cranes to lift from 5 to 10 tons at the breastwork; and a 15-ton crane on Gladstone Pier. Repairs can be done at the large engineering works.

Time Signals.—Chronometers can be checked. A ball is hoisted on the Observatory at 0 h. 55 m. 0 s. p.m., and dropped at 1 h. 0 m. 0 s. p.m. New Zealand standard mean time, equal to 13 h. 30 m. 0 s. Greenwich mean time, and 1 h. 0 m. 59.3 s. local mean time.

Pilotage.—Compulsory. **Sailing Vessels:**—Over 100 tons reg., 3½d. per ton. **Steamers:**—2½d. per ton reg. **Towage:**—The Harbour Board maintain a steam tug, which is open for engagement by vessels requiring her services outside the Heads as well as in the harbour. The day signals for the tug: Flag T International Code at peak; and night signals, two blue lights burnt simultaneously, or two flare-up lights burnt simultaneously as far apart as possible. As a watch is always kept at the pilot station look-out at the Heads, vessels making these signals may be seen. **Sea Towage:**—To a distance of 5 miles outside the Heads, or from sea 7 miles, rises according to tonnage, from £5 for 150-ton vessel, to £26 for a 2,000-ton ship. Towage removals are proportionately low, and vary from £1 to £9, according to tonnage. When the towage from sea exceeds 7 miles outside the Heads an additional charge of £5 per hour is made. For work inside the harbour £4 per hour is charged.

Port Charges.—**Harbour Dues:**—2d. per ton reg. No harbour master's fees are now charged. **Berthage Dues:**—¼d. per ton reg. each time a vessel visits the inner harbour. **Wharfage Dues** (which are payable by the importers and exporters of goods), are as follows:—

General merchandise	1s. 9d. per ton (by weight or measurement).
Agricultural produce, etc.	9d. per ton
Coal, etc., and frozen meat	8d. per ton
Wool	6d. per bale.
Timber	3½d. per 100 ft. superficial.

Transshipment goods are free, and re-shipped goods are also free on declaration.

Graving Dock Charges:—The dock dues for a 300 ton vessel, £20; 400 tons, £22 10s.; 700 tons, £30; 1,200 tons, £45; 1,201 tons and upwards, £50. Four clear days are given in dock in all cases. The Harbour Board find dock and machinery, but take no responsibility. **Hire of Coir Springs:**—£1 for each 21 in. coir hawser used by each vessel at the wharves. **Hire of Fenders:**—Hard wood, 10s. per visit for each used. Soft wood, 10s. for first day, and 5s. for each succeeding day. The latter charge to cover the providing of a sufficient number of soft wood fenders for each vessel. The labour of putting the fenders alongside each vessel is done by the Harbour Board;

New Zealand—Port Lyttelton (continued).

the ships land them when done with. **Patent Slip Charges** :—All vessels up to :—

75 tons gross reg., £4 for 5 days. 10s. per day after.
Over 75 to 150 tons gross reg., £6 for 5 days. 15s. per day after.
Over 150 to 250 tons gross reg., £8 for 5 days. 20s. per day after.
Over 250 tons gross reg., £10 for 5 days. 20s. per day after.

The above rates cover the cost of all labour connected with hauling up and launching (the crew of the vessel to give assistance as required), and the cost of blocking a vessel and shifting the blocks after hauling up. **Light Dues** :—See **New Zealand**.

Pro Forma Charges on a steamer of 4,744 tons net reg., making two visits on the same voyage :—

	3 days. First Visit.	4 days. Second Visit.
Light dues at $\frac{1}{4}d.$ per ton	£ 4 18 10	£ 4 18 10
Pilotage dues at $5d.$ per ton	98 16 8	Nil.
Port charges at $2d.$ per ton	39 10 8	39 10 8
Towage, in and out	6 0 0	6 0 0
Fenders, soft wood (3 days)	1 0 0	1 5 0
Springs (three)	3 0 0	3 0 0
Berthage charges at $\frac{1}{4}d.$ per ton	4 18 10	4 18 10
	<u>£158 5 0</u>	<u>£59 13 4</u>

RUSSELL.

Russell, in lat. $35^{\circ}18'S.$, long. $174^{\circ}12'E.$, is situated on the Bay of Islands.

Population.—300.

Imports.—General merchandise.

Exports.—Kauri gum, flax, timber, butter, canned meat, and fish.

Accommodation.—The harbour is good and well sheltered, and deep enough to take the largest vessel afloat. The anchorage has a water area of 2 sq. miles. Depth at the entrance at high water ordinary springs, 48 to 50 ft., and 42 to 44 ft. at low water. There is a wharf 390 ft. long, which extends from a shelving beach, having a depth alongside of $21\frac{1}{2}$ ft. at high water ordinary springs, and $15\frac{1}{2}$ ft. at low water. This wharf is small and only fit for coasting steamers. There is one hand ballast crane capable of discharging 7 tons per hour, and other cranes to lift from one to two tons. The coaling station of Opuia is situated about 15 miles up the river from Russell. There is a Government wharf 450 ft. long, with a depth alongside of 18 ft. at low water, and 24 ft. at high water ordinary springs. There are three ballast cranes capable of discharging 50 tons per hour.

Pilotage.—Nil. **Towage** :—As per agreement. From £1 to £2 each tow.

Port Charges.—**Light Dues** :—Foreign sailing ships, $6d.$ per ton. Intercolonial trading ships and steamers, $4d.$ per ton. **Wharfage** :— $\frac{1}{2}d.$ per ton for the first 100 tons, and $\frac{1}{4}d.$ for each additional ton. **Boat Hire** :—Boats and steam launches always available at reasonable terms. **Ballast** :—To be had in any quantity.

TAURANGA.

Tauranga Harbour is in lat. $37^{\circ}43'S.$, long. $176^{\circ}5'E.$, and is the nearest port to the great Hot Lake district.

Population.—4,100.

New Zealand—Tauranga (continued).

Imports.—Cotton and woollen fabrics, hardware, wine, beer, silks, spirits, tools, agricultural machinery, tobacco, etc.

Exports.—Wool, hides, sheep skins, tallow, mutton, wheat, maize, potatoes, cheese, butter, flax, tow, fish, etc.

Accommodation.—Vessels of any size can proceed a mile inside the river, to which point there is a depth of from 5 to 7 fathoms of water. The harbour is landlocked, and affords complete shelter. Springs rise 6 ft. ; neaps, $3\frac{1}{2}$ ft. Vessels of 14 ft. draught can ascend as far as Te Papa, about 3 miles from the entrance. There is a strong current of 4 knots, which renders it difficult for large sailing vessels to enter without the aid of steam power.

Pilotage.—None.

Port Charges.—**Light Dues** :—Foreign-going sailing ships, 6*d.* per ton reg. Steamers, 4*d.* per ton reg. **Coasters** :— $\frac{1}{4}$ *d.* per ton reg. **Wharfage** :— $\frac{1}{4}$ *d.* per ton. **Labour** :—1*s.* per hour. Overtime, 1*s.* 6*d.* per hour. **Ballast** :—Sand ballast to be had at low rates.

THAMES.

Thames, in lat. $37^{\circ}7'$ S., long. $175^{\circ}36'$ E., is situated at the mouth of the Thames River.

Population.—About 5,000.

Export.—Timber.

Accommodation.—Strictly speaking, there is no bar, only a long shallow flat, having an average depth of 15 ft. at ordinary spring tides, and 4 ft. 6 in. at low water. There are three wharves about four miles apart, one of which is dry at low water, the others having depths of 11 ft. and 8 ft. at low water. Thames is connected by railway with the whole of North Island to Wellington. There is good anchorage in the Gulf in from 4 to 7 fathoms. There is a modern engineering establishment capable of constructing and repairing all classes of machinery, and of repairing small vessels.

Pilotage.—Compulsory. **Steamers** :—Up to 100 tons, 6*d.* per ton in and out, and 4*d.* per ton for each additional ton in and out. **Sailing Vessels** :—Up to 100 tons, 6*d.* per ton in and out, and 2*d.* per ton for each additional ton in and out. **Towage** :—According to arrangement. About £10 in or out per tide for vessels over 250 tons.

Port Charges.—Vessels enter and clear at Auckland. Regular traders, 2*d.* per ton per quarter ; other vessels, 2*d.* per ton each trip. Not to exceed 1*s.* 3*d.* per ton in half-year. **Light Dues** :—4*d.* per reg. ton on foreign or intercolonial vessels ; coastal vessels, $\frac{1}{4}$ *d.* per ton. **Wharfage** :—2*s.* 6*d.* for the first 20 tons, and $\frac{1}{4}$ *d.* per ton for every ton over 20 tons per day. **Harbour Pilotage** (Harbour-master's fees) :—1*d.* per ton for shifting vessel from wharf to wharf, or from stream to wharf. **Labour** :—1*s.* per hour. **Ballast** :—About 1*s.* per ton or load of 30 cwt.

Pro Forma Charges on a steamer of 500 tons reg., with a cargo of coal, drawing 14 ft. loaded :—

	£	s.	d.
Port charges	4	3	4
Pilotage inwards	4	3	4
„ outwards	4	3	4
Carried forward	£12	10	0

New Zealand—Thames (*continued*).

	£	s.	d.
Brought forward	12	10	0
Boat hire	0	12	0
Wharfage, 7 days at 12s. 6d.	4	7	6
Light dues at ½d. per ton	0	10	5
Harbour-master's fees for shipping	2	1	8
	£20	1	7

TIMARU.

Timaru, in lat. 44°23' S., long. 171°17' E., is the natural outlet of South Canterbury, and is situated at the S.W. extremity of the Ninety Mile Beach, S. of Banks Peninsula.

Population.—7,500.

Exports.—Wool, skins, grain, flour, frozen mutton, and tallow.

Accommodation.—The harbour is closed on the S.E. side by a concrete breakwater, which is 30 ft. wide on the top and 2,278 ft. long. On the N.W. side the harbour is enclosed by a rubble wall, the entrance between the breakwater and the rubble wall being 350 ft., enclosing a space of 50 acres. There are about 2,200 ft. available wharfage for berthing vessels. The depth of water is up to 30 ft. at low water spring tides, and vessels drawing up to 21½ ft. are discharged and loaded with great facility, as the railway runs the whole length of the wharf, and steam cranes are always available. There are four cranes with lifting powers of from 2 to 20 tons. Vessels of 800 tons reg. and over must not anchor in less than 7 fathoms of water, the flagstaff bearing W.S.W. Vessels of less tonnage may anchor closer in on the same bearing, but not within a mile and a half of the breakwater. A mole 3,000 ft. long has been constructed on the E. side of the harbour, forming an outer harbour, with a depth of water at the entrance of 27 ft. at low springs, and making the harbour practically a dock. There is a patent slip to lift 50 tons. There are five small foundries where ordinary repairs can be effected.

Pilotage.—Compulsory. Steamers—2d. per ton inwards and outwards. Sailing vessels—3d. per ton inwards and outwards. If the tug is used, 2d. per ton. Foreign and intercolonial steamers with under 3,500 tons of cargo, working 800 tons or less, pay only one pilotage fee; 3,500 tons or over, working 1,000 tons of cargo or less, pay only one pilotage fee. Foreign-going steamers and sailing vessels calling more than once during the same voyage before leaving New Zealand, pay one inward and outward rate only. **Towage:**—*Sea towage*, to or from sea, being a distance at the discretion of the harbour-master, not exceeding 3 miles from the Timaru Lighthouse, each occasion :—

	£	s.	d.
Vessels under 100 tons reg.	1	10	0
For every additional 50 tons, or fraction of 50 tons reg., up to 500 tons	0	10	0
For every additional 50 tons, or fraction of 50 tons reg., over 500 tons	0	5	0
For distances beyond 3 miles, per mile per ton reg.	0	0	1

A sea towage will in all cases be charged for removal of vessels whose loading is completed, and who may apply for the services of the tug.

Removals:—For removals within the harbour, when the same is performed for the benefit and convenience of the vessel, each occasion, for vessels under 150 tons reg., £1. For every additional 50 tons, or fraction of 50 tons reg., half the sea towage rates. Other services, £5 per hour.

New Zealand—Timaru (continued).

Port Charges.—Coasters, $1\frac{1}{2}d.$ per ton each trip: sailing vessels, $3d.$ per ton each trip; steamers, $6d.$ per ton on cargo worked. Maximum charge, $1s. 3d.$ per ton in any half-year dating from the first days of January and July in each year. Intercolonial steamers coming direct or coastwise, $1\frac{1}{2}d.$ per ton reg., or $6d.$ per ton on cargo landed or shipped, whichever rate may be the less. **Harbour-master's Fees:**— $1d.$ per ton each service. Vessels of less than 120 tons, $10s.$ This fee is charged to all vessels not paying pilotage. Steamers of 1,000 tons or over, which have loaded wholly in New Zealand or Australian ports, working 500 tons of cargo or less, only pay one harbour-master's fee. **Berthage:**— $3d.$ per ton on all cargo landed or shipped. **Light Dues:**—Foreign-sailing vessels, other than intercolonial, $6d.$ per ton reg. Intercolonial sailers and all foreign steamers, $4d.$ per ton reg. **Hawsers and Moorings:**—Vessels at wharves, $\frac{1}{2}d.$ per ton reg. for the first three days; subsequent days, $\frac{1}{4}d.$ per ton. Vessels of under 800 tons at buoys, $\frac{1}{8}d.$ per ton; 800 tons and over, $\frac{1}{16}d.$ per ton. *Note.*—Foreign-going vessels detained in the port 60 days, pay half rates after that period. **Fenders:**—Sailing vessels, under 500 tons reg., $2s.$ per day; under 1,000 tons, $3s.$ per day; over 1,000 tons, $4s.$ per day. Steamers, under 1,000 tons reg., $4s.$ per day; under 1,500 tons, $10s.$ per day; under 2,000 tons, $15s.$ per day; and over 2,000 tons, $\pounds 1$ per day. After three days, half charges. *Note.*—Foreign-going vessels detained in the port after 60 days pay half rates. Maximum charge for moorings and fenders for any one visit is $\pounds 15$. **Craneage:** Lifts up to 2 tons weight, per ton weight or measurement, $6d.$; lifts over 2 tons weight, and up to 6 tons, $10d.$ per ton. Lifts over 6 tons weight, as per arrangement. **Water:**—For boilers, $2s.$ per ton, or fraction of a ton. Minimum charge, $2s.$ **Stevedore:**—Loading sailing vessels, $9d.$ per ton; steamers, $1s.$ per ton. Discharging, $1s.$ per ton. Labour on steamers, $1s. 6d.$ per hour; sailing vessels, $1s. 6d.$; overtime, $2s.$ **Entrance and Clearance:**— $\pounds 5\ 5s.$

Pro Forma Charges on a steamer of 4,000 tons net reg., loading 975 tons of cargo:—

	£	s.	d.
Port charges on 975 tons at $6d.$ per ton	24	7	6
Pilotage	33	6	8
Use of moorings and fenders	15	0	0
Berthage	12	3	9
Water, 10 tons	1	0	0
Entrance and clearance	5	5	0
	<hr/> £91 2 11 <hr/>		

Pro Forma Charges on a foreign sailing vessel of 1,000 tons reg., in ballast, and loading 1,500 tons of cargo:—

	£	s.	d.
Port charges	12	10	0
Pilotage	16	13	4
Use of moorings and fenders	15	0	0
Berthage	18	15	0
Towage	16	0	0
Removal (one)	4	0	0
Water	1	0	0
Discharging 500 tons of ballast	15	0	0
Entrance and clearance	5	5	0
	<hr/> £104 3 4 <hr/>		

New Zealand.

WAITARA HARBOUR.

Waitara Harbour, in lat. 39°0' S., long. 174°14' E., at the mouth of the Waitara River, is about 13 miles to the N.E. of the outer Sugar Loaf Island, in lat. 38°59' S., long. 174°14' E.

Exports.—Frozen beef, mutton, and lamb, flax, wool, and tallow.

Accommodation.—Vessels drawing 9 ft. at neaps can always cross the bar, and 12 ft. at springs. The general soundings one mile off shore are from 5 to 7 fathoms on sand and rocks. A submerged reef, which is $1\frac{1}{4}$ miles long, lies about 3 miles to the westward of the entrance, and extends to the distance of 1 mile from the shore. Shoal water extends with rocky bottom on each side of the Waitara Bight. Inside the bar, the river is navigable as far up as the bridge, where the railway wharf is situated, a distance of about three-quarters of a mile from the bar. The depth in the channel at low water spring tides is about 2 ft.

The water area of the port is 15 acres. The railway quay is 400 ft. long, with 10 ft. alongside at high, and 7 ft. at low, springs. There are two cranes to lift from 2 to 5 tons each, situated on the railway quay. There is a cattle wharf which can only be reached by vessels drawing 9 ft. A buoy indicating the anchorage for ocean-going steamers has been laid in the roadstead in 9 fathoms (low water). Labour and materials for repairs at reasonable prices.

Pilotage.—Into or out of the river, $\frac{1}{2}d.$ per ton reg. To or from the roadstead, $\frac{1}{4}d.$ per ton reg. **Towage** :—A small steamer for towing small vessels or barges is to be had.

Port Charges.—Steamers and sailing vessels, $3d.$ per ton quarterly, payable first trip in each quarter. Ocean-going vessels, $\frac{1}{2}d.$ per reg. ton, payable each trip. **Wharfage** :—Sailing vessels, $3d.$ per ton reg. Steamers, $2d.$ per ton reg. Sailing vessels are allowed two days for every 50 tons reg., and steamers one day for every 100 tons reg. The Freezing Company have three insulated barges for carrying frozen meat to the large steamers, carrying from 60 to 80 tons each. **Water** and ship's provisions are abundant.

Pro Forma Charges on a vessel of 5,381 tons reg. :—

	£	s.	d.
Pilotage to roadstead at $\frac{1}{4}d.$ per ton	.	5	12 1
Port charges at $\frac{1}{4}d.$ per ton	.	11	4 3
Light dues at $\frac{1}{4}d.$ per ton (coastwise)	.	5	12 1
Wharfage, 5,381 tons at $2d.$	.	44	16 10
	£67	5	3

WANGANUI.

Wanganui, in lat. 39°55' S., long. 174°57' E., is situated on the north bank of the river of that name, about 4 miles from its mouth.

Population.—8,175.

Imports.—General merchandise.

Exports.—Frozen meat, wool, tallow, hides, grain, etc.

Accommodation.—The mouth of the river lies in the depth of the great bight between Cape Terawhiti and Cape Egmont, and at about an equal distance from both. Like all the river harbours on the west coast, Wanganui has a bar, and only small vessels are able to go up to the wharves

New Zealand--Wanganui (continued).

at the town. The bar is usually from one-half to three-quarters of a mile from the signal flagstaff, but the channel varies with the strength of the river current and the state of the sea. The depth on the bar is 3 ft. to 4 ft. at low water springs, and 7 ft. to 9 ft. at high water neaps. With fresh westerly winds, the bar is one unbroken line of surf. About half a mile inside the entrance an internal wall is being constructed parallel with the South Spit, carrying a red beacon on either end, and a red light at night. A breakwater extends from North Head in a south-westerly direction for a distance of 900 ft. from the shore. In moderate weather, vessels can approach safely within signalling distance, and then, having to wait for the tide, can anchor in 4 to 8 fathoms, 1 to 2 miles from the bar. Vessels arriving off the bar at night should show a flashlight at short intervals, or burn blue lights, which will be answered by a torch or flare-up light from the pilot station. Sailing vessels should not attempt to cross the bar at night, as the wind then generally dies away, or draws off the land. Wanganui River can only be entered by sailing vessels in moderate weather, and with a leading wind. With any prospect of bad weather vessels should not get embayed, but wait under Kapiti for an opportunity to enter the river. The pilot will board inward-bound vessels inside the bar, when requested to do so by signal.

Pilotage.—Compulsory. The pilot station is on the extremity of North Head, and is in telephonic communication with the town. Vessels, when piloted by signals from the staff only, 1*d.* per ton reg.; river pilotage, by pilot or any of his crew inside the bar, 2*d.* per net ton reg. When a pilot boards and conducts a vessel outside the bar, 3*d.* per net ton reg.

Port Charges.—Vessels of 500 tons reg. and up to 8,000 tons reg., $\frac{1}{2}$ *d.* per ton. Not to exceed 3*d.* per ton in any half-year. Vessels paying pilotage are exempt from the above charges. Ocean-going vessels returning to the port within one month of their first arrival are exempt as regards second or subsequent arrivals. **Berthage** :—For every steamer using any wharf being berthed alongside, and whether discharging or loading cargo or not, 2*d.* per ton on gross reg. for first day of eight working hours, and 1*d.* for every succeeding day of eight working hours. For every sailing vessel the charge to be 2*d.* for first day of eight working hours, and $\frac{1}{2}$ *d.* for every succeeding day of eight working hours, not exceeding five days. For every vessel occupying a berth outside another vessel, and loading or discharging cargo, $\frac{1}{4}$ *d.* per ton on gross reg. per day of eight working hours whilst loading or discharging. Ships' dues on vessels detained in port by stress of weather will not be charged after third day. **Light Dues** :—Vessels from ports beyond the Australian Colonies, 3*d.* per ton reg.; steamers from ports out of New Zealand, and sailing vessels from Australian Colonies, 2*d.* per ton reg. **Harbour-master's Fees** :—Each time the harbour-master or his deputy goes on board to appoint the place of any vessel, or to remove her from one place of anchorage to another, 1*d.* per ton reg.

WELLINGTON.

Wellington, in lat. 41°15' S., long. 174°45' E., is situated within the harbour of Port Nicholson, lying at the southern extremity of the North Island in Cook Strait. Shortest sea route from Liverpool, 11,800 miles.

Population.—Including suburbs, 67,535.

New Zealand—Wellington (*continued*).

Imports.—General merchandise.

Exports.—Wool, frozen meat, tallow, oleo, preserved meat, skins, hides, dairy produce, coal, leather, hemp, sausage skins, kauri gum, grain, timber, fungus, seeds, oils, minerals, etc.

Accommodation.—The harbour contains an area of about 20,000 acres, having depths varying from 6 to 14 fathoms, and a sufficient capacity to afford accommodation for the largest vessels. The anchorage is good throughout, the bottom being silty clay and sand. Being landlocked, it is well sheltered. The prevailing winds are N.N.W. and S.S.E. The width of the entrance at the narrowest part exceeds 3,600 ft., with a depth of some 7 or 8 fathoms. The rise and fall of the tides varies from 3 to 4 ft., and the channel to the harbour has a depth of not less than 33 ft. at low water springs. There are 10,615 ft. of berthing accommodation, with depths of water from 32½ ft. down to 16 ft., including nine berths for ocean steamers. The outer tee of the Queen's Wharf, 1,715 ft. long, with depths of from 21 ft. to 31 ft., is provided with a 10-ton hydraulic crane; a 40-ton derrick crane is placed at Jervois Quay, having 23 ft. of water alongside at low tide. There is a complete installation of 2-ton hydraulic cranes, and rotary jiggers for all the principal berths, with jiggers for handling cargo in the stores. Ample storage accommodation exists, and wool and hemp presses are provided. The Glasgow Wharf has two ocean berths with 32 ft. 6 in. alongside at low water, and is fitted with hydraulic cranes. The Railway Wharf has two ocean berths, with 32½ ft. alongside at low water. There are dolphins and buoys at Evans' Bay for swinging ships for adjustment of compasses. A patent slip (owned by a private company) is situated in Evans' Bay, which can take vessels up to 2,000 tons, not exceeding 300 ft. in length, or a greater draught than 16 ft. forward. The ways are laid to a gradient of 1 in 23, and are 1,070 ft. long, and have a depth of 32 ft. at the outer end at high water ordinary springs. **Charges:**—Vessels over 200 tons reg., 1s. per ton on the gross tonnage, for the first day or part of a day, and 6d. per ton for every day or part of a day that the vessel remains on the slip. All ordinary repairs to wooden and iron vessels and to engines and boilers can be effected.

Time Signals.—Chronometers can be checked. A ball is hoisted on the tower of "J" shed, Waterloo Quay, at the root of the Railway Wharf, and dropped at noon New Zealand standard time, equal to 12 h. 30 m. 0 s. Greenwich mean time, and 0 h. 9 m. 4·5 s. local mean time. A flag is flown near the time ball on the days when the time signal may be used for rating purposes.

Pilotage.—Not compulsory. Steamers—3d. per ton inwards, 2d. per ton outwards. Sailing vessels—4d. per ton inwards, and 3d. per ton outwards. Pilotage includes the removal fee to or from the berth at ¾d. per ton. **Towage:**—From sea, 4d. per ton reg. up to 1,200 tons; 3d. per ton on every ton above 1,200 tons; minimum charge, £8. Removals, by tugs, within the harbour, 1d. per reg. ton; minimum charge, £2 10s.

Port Charges.—2d. per ton on arrival, not exceeding 6d. per ton in any half-year. Steamers arriving for coal, stores, water, or for receiving or landing mails or passengers and their luggage, are exempt from port charges. **Light Dues:**—Sailing vessels, 6d. per ton reg. Steamers, 4d. per ton. All foreign-going vessels having previously called at, and paid light dues at any other port, pay ¼d. per ton. **Harbour-master's Fee:**—On vessels

New Zealand—Wellington (continued).

of 120 tons and upwards, $\frac{3}{4}d.$ per ton. Under 120 tons, 10s. Vessels paying pilotage are exempt. **Berthage Charge** :— $\frac{1}{4}d.$ per ton net reg. per day or part of a day. Vessels being repaired are charged half rates. **Harbour Improvements Rate** :— $4d.$ per ton on all goods landed, except coal and ballast or goods which are being transhipped to vessels, to be carried out of the Colony. **Ballast** :—Clay, 2s. $6d.$ per ton, delivered at ship's side : rock ballast, 3s. to 3s. $6d.$ per ton : hard blue rock, suitable for road metal, 6s. per ton. These prices include Harbour Board wharfage charges, but the ship has to put the ballast on board. **Water** :—6s. $8d.$ per 1,000 gallons ; minimum charge, 2s. Men-of-war, 2s. $6d.$ per 1,000 gallons. **Coal** :—There is always a stock of 3,000 tons, and the price of best New Zealand steam coal, delivered on board, varies from 20s. to 23s. per ton.

WESTPORT.

Westport, in lat. $41^{\circ}45' S.$, long. $171^{\circ}42' E.$, lies on the east bank of the Buller River, about 1 mile from its mouth.

Population.—3,642.

Imports.—General merchandise.

Export.—Coal.

Accommodation.—Westport is the great coal port of New Zealand. The entrance to the river lies due east (true), $5\frac{1}{4}$ miles from the Steeple Rocks, and 6 miles E. by N. from Cape Foulwind. About 5 miles to westward of the entrance, a natural shelter from the prevailing winds (south-westerly) is formed by Cape Foulwind and the Steeples, which extend northwards from the coast, and anchorage may be found anywhere outside the breakwaters in from 10 to 15 fathoms, 1 to 2 miles off. There is good holding ground, sheltered from E.N.E. round E. to W.S.W. In front of the town is a large reserve upon which the coal staithes, wharves, railway terminus, and Government buildings are erected. The depth at high water spring tides is 24 ft. on the bar, and 22 ft. in the river. Vessels drawing 20 ft. 6 in. have left the port at spring tides, and frequently load to 18 ft. at neap tides. Spring tides rise 10 ft., neap tides 5 ft. 6 in. approximately. Vessels bound for Westport should be guided by the signal shown on the flagstaff which stands on the western breakwater, 2,100 ft. from its outer or sea-wall end, particular attention being given to the semaphore arm, and steer as directed by it, if possible. The set of the currents should be watched when outside the bar, especially after W. and S.W. winds ; their velocity is least about the time of high water, and during one or two hours before and after. The beacons erected on dolphins on the west side of the Buller River mark the fairway for crossing the bar and leading up the river. These beacons, when kept in line S. 26° E. (magnetic), lead up the river until approaching the lagoon, when a course may be steered for the wharves or coal staithes. The fairway lights (red) and the harbour light (white) will be shown from sunset to sunrise, except when the bar is unsafe, when the fairway lights will not be shown.

Two breakwaters are now constructed ; the western one is 4,276 ft. long, and the eastern 4,736 ft. The width between them is 700 ft. A red light is shown during the night on the end of the western breakwater, and green on the eastern. Steamers of 350 ft. in length can turn on the river at high water neap tides, if drawing not more than 9 ft. forward ; and steamers

New Zealand—Westport (*continued*).

of 370 ft. in length can swing at high water spring tides, if drawing not more than 12 ft. forward. When the fender piling is completed at the opening to Flotsam Basin, ships of 500 ft. in length will be able to swing. The port and railway equipment is at the present time equal to an output of 20,000 tons per week. When the floating basin is completed it will comprise an area of 43 acres, with a depth of 26 ft. at low water spring tides.

All the wharves and coal staithes are under the control of the Government Railway Department, and all vessels are berthed at the wharves and coal staithes. The loading facilities are as follows: (1) Merchandise wharf, 350 ft. long. The depth of water at this wharf ranges from 14 ft. at upper end to 18 ft. at lower end, at low water spring tides, in line with vessels' keels. (2) Coal and timber-loading wharf, 430 ft. long, connecting merchandise with coal staithes at upper end. On this wharf there is a 12-ton steam crane. Depth of water ranges from 20 ft. at upper end to 22 ft. at lower end at low water spring tide. (3) The coal staithes are 1,150 ft. long, and rise from 20 ft. above high water spring tide at the upper end to 36 ft. above the same level at the lower end. They are capable of storing 2,000 tons of coal in thirty-six bins, and they have 24 coal-loading shoots; the lips of the bins and shoots, to which telescopic shoots are hinged, range from 8 ft. to 25 ft. above high water spring tide. The average dispatch in coal-lading at these staithes is from 200 to 250 tons per hour, but it is no uncommon matter for 380 tons to be loaded into a vessel in the ordinary course of working in one hour. The depth of water ranges from 22 ft. at the upper end to 25 ft. at the lower end at low water spring tide. (4) Coal-loading crane wharf, of 1,830 ft., is available for use in coal loading, with two modern movable 20-ton and one 15-ton coal-loading cranes. The wharf will be equipped eventually with seven movable steam coal-loading cranes of the most approved and modern pattern. (5) A wharf is also specially set apart and is available for the unloading of explosives. (6) A new cattle wharf and pen has been constructed below these wharves for the expeditious handling of stock, outside the town limits, and is now available. The station yards and wharves are all efficiently lighted with incandescent gas lamps. The present output of coal is 700,000 tons per annum.

Pilotage.—Compulsory. All vessels up to 100 tons reg., free. Steamers and sailing vessels above 100 tons reg., 1*d.* per reg. ton each way, in and out. Pilotage one way only, half rates. **Towage** (both ways, in and out):—Sailing vessels—Minimum charge, £7 10*s.*; maximum charge, £37 10*s.* Vessels of 200 tons and upwards, 9*d.* per reg. ton. Steamers—1½*d.* per reg. ton; minimum charge, £12 10*s.*; maximum charge, £40. Vessels of 1,000 tons and upwards, 3*d.* per reg. ton. Any vessel using the tug one way only, either in or out, half rates, and vessels arriving for bunker coal, half rates.

Port Charges.—Receiving and discharging ship's ballast, 1*s.* per ton; minimum charge, £1. For use of shoot, 1*d.* per ton. **Berthage**:—Use of wharf, for every vessel up to 1,400 tons, lying at a wharf, 1*d.* per ton net reg. per trip. Vessels over 1,400 tons, 2*d.* per ton net reg. per trip; minimum charge, 5*s.* No vessel to be charged for more than one trip in any one week. **Wharfage Rates**:—According to weight or measurement, at the option of the department. All goods, not otherwise specified, 2*s.* per ton; minimum charge, 3*d.* **Goods for Transhipment**:—Goods landed from one ship and re-delivered to another ship, 2*s.* 6*d.* per ton, according to

New Zealand—Westport (*continued*).

ship's manifest, or by weight or measurement at the option of the department, including wharfage, handling, and one week's storage, after which storage will be charged for. Goods transhipped into lighters or vessels from vessels lying alongside the wharves, 1s. per ton. **Craneage** :—For use of the steam crane on the wharf or in the yard, 6d. per ton ; minimum charge, 15s. This charge does not include the cost of hauling to the crane when the goods have been previously deposited at a distance. Minimum charge for the use of the 12-ton steam crane, £1 ; for the 20-ton crane, £2. **Labour** :—General cargo, 1s. 6d. per hour (day) ; 2s. per hour (night). Coal trimmers (if required), 2s. per hour, day and night. On Christmas Day and Good Friday, the rates are 2s. for cargo, and 2s. 6d. for coal. **Water** :—Can be obtained from the municipal gravitation supply at 5s. per 1,000 gallons, at any berth in the port. **Light Dues** (payable to Customs) :—Sailing vessels coming from a last port not in the Colonies, 6d. per reg. ton. Steamers, 4d. per reg. ton. Vessels or steamers coming from a last port in the Colonies, other than New Zealand, 4d. per reg. ton. Vessels or steamers coming from any port in New Zealand, 1d. per reg. ton. **Provisions** :—Fresh meat, 4d. per lb. **Coal** :—Bunker coal, 13s. 6d. ; for unscreened small coal (if available), 10s.

Pro Forma Charges on a steamer of 2,237 tons net reg., arriving in ballast, and loading cargo of coal :—

	£	s.	d.
Light dues at 4d. per reg. ton	37	5	8
Pilotage, in and out	18	12	10
Berthage at 2d. per reg. ton	18	12	10
Towage out at 1½d. per reg. ton	13	19	8
Water, 52,500 gals. at 5s.	13	2	6
Provisions (fresh meat).	22	16	8
Brokerage	2	2	0
	<hr/> £126 12 2 <hr/>		

CHATHAM ISLANDS.

This group of islands, which includes Pitt Island and Cornwallis Island, is situated 536 miles E. of New Zealand, in lat. 43°50' S., long. 176°30' W. The islands have an area of about 375 square miles.

Population.—400.

Imports.—Building timber, bricks, clothing, furniture, and general merchandise.

Exports.—Wool, sheep, pigs, cattle, horses, etc.

Waitangi, the principal port (so called) of the islands, is in effect a roadstead. It is situated on the S.E. side of Petre Bay, and although dangerous when W. and W.S.W. gales are blowing, it is otherwise safe, being sheltered from all other winds. When Waitangi roadstead is not considered safe, vessels take refuge in Whangaroa or Port Hutt, a really good and safe harbour on the N.W. side of the bay, which is 11 miles wide at this point. The best anchorage at Waitangi is under the Tiki-tiki headland, in about 4 fathoms or more. Large ocean liners generally anchor further out in 4 to 7 fathoms, in which position, however, they lose much of the shelter afforded by the headland. There is a small wharf for the use of lighters, by which cargo is conveyed to and from the vessels in the roadstead, but otherwise

New Zealand—Chatham Islands (*continued*).

there is no accommodation for ships. There is a two-monthly mail service with Lyttelton, New Zealand ; few other vessels ever call at the islands.

Whangaroa, or Port Hutt, is on the N.W. side of Petre Bay. The best anchorage is at the head of the harbour, in 5 fathoms of water. There is room to swing two steamers of, say, 1,200 tons each. A little further out there is 7 fathoms, but, the bottom being of gravel, it is not advisable to anchor in this position. Wooden vessels of 300 tons are built, and repairs in wood are undertaken.

Kaingaroa is a small harbour on the N.E. coast of Chatham Island. There is accommodation for two steamers of 300 tons, in from $2\frac{1}{2}$ to 3 fathoms, but it would not be safe to remain here in heavy northerly weather, the anchorage being sheltered by an outlying line of rocks through which the heavy swell breaks.

All other calling places round the islands are open roadsteads. There are no charges of any kind on shipping.

THE COOK ARCHIPELAGO.

The Cook Archipelago consists of a group of islands lying between the Friendly and Society groups, about 700 miles south-east of Samoa. The islands composing the group are Rarotonga, Mangaia, Atiu, Takatia, Aitutaki, Mauke, and Mitiaro ; they have an area of about 142 square miles and a population of about 6,800. Placed under British protection in 1888, they were annexed to New Zealand in June, 1901. Almost the whole of the trade of the islands is with New Zealand, with which there is steamship communication.

Rarotonga Island is in lat. $21^{\circ}12'$ S., long. $159^{\circ}50'$ W.

Population.—2,450.

Imports.—Provisions, drapery goods, hardware, building materials, etc.

Exports.—Fruit, copra, coffee, etc.

Accommodation.—The anchorage in the roadstead is good and safe for steamers, except during the hurricane season, December to March. There are two harbours in the reef, each about 200 ft. in diameter, only used by small schooners trading in the islands.

POLYNESIA.

Polynesia, the region of many islands, is the general name given to the islands of the Pacific, and although geographers as a rule subdivide these into three great groups—Melanesia, Micronesia, and Polynesia Proper—according to the race of people inhabiting them, it has been decided that it would be more in keeping with the purposes of this work to depart from this exact division and to group them under the headings of the Great Powers to whom they belong, either by annexation, purchase, or otherwise, or by whom they are protected. Following this rule, the vast number of islands dotted about in this portion of the Pacific Ocean will be found described under one or other of the following general headings :—

British Possessions.

French Possessions.

German Possessions.

United States (American) Possessions.

BRITISH POSSESSIONS.

The British possessions in Polynesia include Baker Island, Fanning Island, the Fiji Islands, the Gilbert and Ellice groups, Malden Island, the south-eastern portion of the island of New Guinea, the Phoenix group, a section of the Solomon Islands, and the Tonga or Friendly Islands. These have an aggregate area of about 110,000 square miles, with a population estimated at about 1,000,000. In addition to the above, all of which are more particularly described in the following pages, there are a number of small unattached islands administered by H.B.M.'s High Commissioner for the Western Pacific, which, although of little importance and rarely visited by ships, may perhaps be briefly mentioned here as follows :—

Christmas Island, in lat. $2^{\circ}0'$ N., long. $157^{\circ}20'$ W. Area, 234 square miles ; population, 100. Export, guano.

Ducie Island, in lat. $24^{\circ}40'$ S., long. $124^{\circ}50'$ W. Of no importance.

Dudosa Island, in lat. $7^{\circ}40'$ S., long. $161^{\circ}0'$ W. Area, 2 square miles. Seldom visited.

Jarvis Islands, in lat. $0^{\circ}20'$ S., long. $159^{\circ}55'$ W. Area, $1\frac{1}{2}$ square miles. Population, 30.

Palmyra Islands, in lat. $6^{\circ}0'$ N., long. $162^{\circ}10'$ W. Area, $1\frac{1}{2}$ square miles. One of the scattered groups now under British protection.

Phoenix Group consists of eight islands, Birney, Enderbury, Gardner, Hall, McKean, Mary, Phoenix, and Sydney, all between lats. $2^{\circ}30'$ and $4^{\circ}30'$ S., and long. 171° and 175° W. Area of group, 16 square miles. Population, 59.

Pitcairn Island, in lat. $25^{\circ}7'$ S., long. $130^{\circ}20'$ W. Area, 2 square miles. Population, 169. Products : Sweet potatoes, yams, fruit, arrow-root, and coffee. Ships communicate with the islanders at Bounty Bay, one of the only two possible landing places for boats. The islanders own a 14-ton cutter, with which they transport their produce to Mangarewa (Gambier Islands).

Polynesia (British Possessions).

Santa Cruz Islands, in lat. $10^{\circ}30'$ S., long. $166^{\circ}0'$ E., and **Duff or Wilson Islands**, in lat. $10^{\circ}0'$ S., long. $167^{\circ}10'$ E. These two groups consist of eighteen islands and have an aggregate area of about 750 square miles, with a population of some 5,000.

Union or Tokelau Islands, between lat. $8^{\circ}30'$ and 11° S., long. 171° and 172° W. These consist of five clusters of islets, the principal of which are Fakaafo, Nukunono, Oatafu, Nassau, and Danger. These have a total area of 7 square miles, with a population of 1,050.

Victoria Island, in lat. $6^{\circ}48'$ S., long. $160^{\circ}41'$ W. Area, 2 square miles. This island is uninhabited.

Washington Island, in lat. $4^{\circ}42'$ N., long. $160^{\circ}25'$ W. Area, 6 square miles.

There are also a few other groups forming part of the British possessions in the Pacific, but for convenience of administrative purposes they have been attached to one or other of the Australasian States or New Zealand, and mention of them will be found under the sections devoted to those states.

BAKER ISLAND.

Baker Island is in lat. $0^{\circ}10'$ N., long. $176^{\circ}35'$ W. It is uninhabited and not now worked, though formerly a guano export was carried on.

BRITISH NEW GUINEA.

(See **Territory of Papua**, p. 1636.)

ELLICE ISLANDS.

(See **Gilbert and Ellice Islands**, p. 1635.)

FANNING ISLAND.

Fanning Island, a British possession in lat. $3^{\circ}50'$ N., long. $159^{\circ}21'$ W., is administered by the High Commissioner for the Western Pacific. It has an area of 15 square miles and a population of 150, the majority of the white inhabitants being members of the staff of the Cable Company having its station upon the island.

Imports.—Food and clothing.

Exports.—Copra, cocoanuts, and guano.

Accommodation.—The port is safe for steamers up to 1,000 tons, drawing, say, 15 ft., and not longer than 325 ft., and for sailing vessels up to 12 ft. draught. Tides rise and fall 3 ft.

Pilotage.—4s. per foot draught in, and the same out.

Port Charges.—**Mooring** :—Usually about £2, according to time taken. **Labour** :—8s. per day. **Water** :—Free if taken by vessel from wells ; if taken from shore, a charge of $\frac{1}{2}d.$ per gallon is made. **Coal** can be obtained at £2 10s. per ton.

FIJI ISLANDS.

The archipelago of Fiji, a British Crown Colony, embraces some 255 islands and islets lying between 15° and 20° S. lat., and 177° E. and 178° W. long. These islands, of which only about 80 are inhabited, are scattered over an

Polynesia (British Possessions)—Fiji Islands (*continued*).

ocean area of 300 miles from west to east, and 200 miles from north to south. They have a total area of 7,435 square miles, with a population, estimated on the basis of the last census, of 128,404. Two of the islands are of considerable size—the largest, Viti Levu, having an area of 4,113 square miles, and the second largest, Vanua Levu, 2,432 square miles.

Commerce.—The foreign trade is of an annual value of about £1,500,000, imports being valued at £643,007 and exports at £881,364. The principal items of import are drapery goods, machinery, hardware, live stock, bread-stuffs, biscuits, timber, rice, meats, oil (kerosene), galvanized iron, bags and sugar mats, iron (sheet, bar, rod, and pipes), spirits, butter, ghee, etc., whilst the exports comprise sugar, copra, fruits (chiefly bananas), turtle shell, bêche-de-mer, pea nuts, and vanilla.

The total tonnage entered and cleared during 1906 was 418,090 tons. The two principal ports are Suva and Levuka, but steamers call regularly at Ba, Labassa, Rambai, Vuna Point, Mango, Loma Loma, Lautoka, Suva Suva, Laucala Bay, Navua, and Rovodrou—all of which have good anchorages.

Mercantile Marine.—The mercantile marine registered in the colony consists of six sailing vessels and seven steamers, with a total tonnage of 1,659. In addition there are 162 locally owned vessels to which coasting licences have been issued; these have a total tonnage of 1,874 tons.

Internal Communications.—Communication between the various islands is maintained by an excellent service of steam launches. There is a post, telegraph, and telephone service, and a submarine cable linking Suva with Levuka.

Currency, Weights and Measures.—These are the same as those in use in the United Kingdom.

Pilotage.—

	£	s.	d.
Vessels of 60 tons reg. and under	1	0	0
Vessels exceeding 60 tons reg., per reg. ton	0	0	4
Pilotage on any vessel not to exceed	10	0	0
Pilotage shall be charged inwards and outwards.			
Vessels of over 60 tons burden in ballast or not carrying cargo to be landed in the Colony, half the above rates shall be charged.			

EXEMPTIONS.

Steam vessels under contract with the Colonial Government.
Vessels put back in distress and vessels holding coasting licences.
Ships of war.
Mission vessels.

REMOVALS.

	£	s.	d.
For removal in harbour of any vessel under 100 tons	0	10	0
Exceeding 100 tons	1	0	0

Light Dues.—

Vessels from ports beyond the Colony, per reg. ton	0	0	3
Unlicensed vessels carrying coastwise	0	0	2
Only half the above dues shall be charged on vessels calling at any port for the purpose of taking in coal, stores, or water, or for repairs, and not landing passengers or cargo in the Colony.			
Light dues shall be charged inwards only.			

EXEMPTIONS.

Steam vessels under contract with the Colonial Government.
Vessels put back in distress and vessels holding coasting licences.
Ships of war.
Mission vessels.

Polynesia (British Possessions)—Fiji Islands (*continued*).**Tonnage Duty** per one day on any part thereof.

Vessels of—		£	s.	d.
Over	2 tons to 10 tons	0	4	0
"	10 " 20 "	0	6	0
"	20 " 30 "	0	10	0
"	30 " 150 tons, 10s. for the first 30 tons and 2d. for every additional ton.			

151 tons to 250, £1 10s. for the first 150 tons, and 1½d. for every additional ton.

251 tons to 500 tons, £2 2s. 6d. for the first 250 tons and 1d. for every additional ton.

Over 500 tons, £3 3s. 4d. for the first 500 tons and ½d. for every additional ton.

No vessel to pay more than £5 a day.

Coasting Licences.—

Annual rate for coasting licences—		£	s.	d.
Cargo-boat, or vessel of any kind under 2 tons		1	0	0
For every additional ton up to 20 tons reg. per annum		0	4	0
For every additional ton above 20 tons (in addition to amount leviable on first 20 tons) per ton per annum		0	2	0

Punt Hire.—

For 24 hours from when taken over, £3.

For 24 hours from when taken over, £1 for quarantine purposes.

Levuka, in lat. 17°40' S., long. 178°45' E., is situated on the E. coast of the Island of Ovalau, and is connected with Suva by cable.

Exports.—See **Suva**. (The trade is principally with Australia, New Zealand, and Canada.)

Accommodation.—There are two entrances to Levuka Harbour ; the southern one, principally used, is 300 yards wide. The south anchorage is in 10 to 15 fathoms, sand, coral, and mud. There is a Government wharf (Queen's Wharf) 625 ft. long, with a depth of 23 to 35 ft. at high water, and 18 to 30 ft. at low water. There is good anchorage, and vessels load and discharge at the wharf, or by punts. There is no bar.

Port Charges.—For pilotage and port charges, see **Fiji Islands**.

Shipbroker :—For entrance and clearance, £5 5s. Commission on freight, 5 per cent. **Labour** :—Natives, 2s. per working day of 10 hours. **Provisions** :—Fresh meat, 6d. per lb. Breadstuffs slightly dearer than in Australian ports. **Water** :—1s. per ton.

Suva, in lat. 18°2' S., long. 178°24' E., is on the S. coast of Viti Levu, and is the capital of the Fiji Islands, being the chief port of call for steamers going to or leaving the islands.

Imports.—Breadstuffs, meats, drapery, hardware, timber, etc.

Exports.—Sugar, copra, green fruit, maize, cocoanuts, bêche-de-mer, and pearl shells.

Accommodation.—It has a fine natural harbour, being landlocked on three sides, and having a reef which forms a permanent breakwater on the fourth side. The harbour has an area of about 1,000 acres, with a depth of from 10 to 30 fathoms at all tides and good anchorage on mud bottom. Vessels load and discharge at the wharf, or by means of punts. Length of wharf with 25 ft. at low water, 300 ft. ; length with 15 ft. at low water, 250 ft. ; and 200 ft. with 10 to 25 ft. at low water. Rise and fall of the tide, 4 ft. 6 in. at ordinary tide, and 6 ft. at springs. There is no bar. The entrance is 400 yards wide, and the water is always perfectly smooth.

Port Charges.—For pilotage and port charges, see **Fiji Islands**.

Polynesia (British Possessions)—Fiji Islands *(continued).*

Shipbroker :—For entrance and clearance, £5 5s. **Labour** :—Natives, 2s. per day of 10 working hours. **Commission** :—On freight, 5 per cent. **Provisions** :—Fresh meat, 6d. per lb. Breadstuffs slightly dearer than in Australian ports. **Water** :—1s. per ton.

FRIENDLY ISLANDS.

(See **Tonga Islands**, p. 1637.)

GILBERT AND ELLICE ISLANDS.

The Gilbert Islands are a little group of sixteen islands lying on the equator between long. 172° and 177° E. They have an aggregate area of 166 square miles, with a population of about 30,300, of whom 300 are foreigners.

The Ellice or Lagoon Islands lie between lat. 5°30' and 11°30' S., and long. 176° and 180° E.; they consist of Funafuti and eight other islands and islet groups, the principal of which are Sophia or Rocky Island, Nukulaelae, Vaitupu, Netherland, and Lynx. They have a total area of about 170 square miles, and a population of 2,400, a small number when compared with the swarming population of the adjoining Gilbert Islands.

The trade of these two groups is of an annual value of nearly £42,000, the latest returns available showing imports £20,360, and exports £21,582 (consisting of copra £21,165, and sharks' fins £417).

Ocean Island or Banaba is situated in lat. 0°52' S., long. 169°35' E., and is included in the Gilbert Group.

Export.—Phosphate.

Accommodation.—Vessels moor at buoys in Home Bay, the phosphate being conveyed from the jetties in surf boats to the steamers at their moorings. These moorings are absolutely secure during wind from off the land, but steam should be kept up in order to be ready to slip should the wind blow from the sea. A strong south-west swell at times sets into the bay, but steamers can be kept without risk at the buoys, and load from 500 to 1,000 tons of phosphate per day. There is a new steel jetty at Tapiwa settlement.

MALDEN ISLAND.

Malden Island is in lat. 4°0' S., long. 154°58' W. Area 35 sq. miles.

Population.—About 168.

Export.—Guano.

Accommodation.—There is accommodation for vessels of 1,800 tons d.w., and vessels of 300 ft. can swing on the moorings. The island should be made from the S., under easy sail, and heave to before getting to the S.W. The current sets strongly to the W., and shipmasters should be careful in approaching not to proceed too far N. or W., as it is almost impossible to beat back. There is also a strong current between Malden Island and Starbuck Island (which is now uninhabited). There is one mooring buoy in 100 fathoms, about $\frac{1}{4}$ mile off the W. end, and another is being laid down. The guano (which is loaded at the rate of 100 to 150 tons per day) is brought alongside the vessel in bags by 10-ton lighters, within reach of the vessel's stages or tackles, the crew emptying the bags and returning them. A pilot will come off and take the vessel to her moorings on arrival.

Port Charges.—There are no mooring, pilotage, or port charges for vessels loading guano at this island.

Fish is plentiful, but fresh water and provisions cannot be had.

Polynesia (British Possessions).

TERRITORY OF PAPUA (British New Guinea).

This British Crown Colony has, since the passing of the Papua Act and the issue of a Proclamation by the Governor-General of the Commonwealth of Australia under that Act on September 1, 1906, been known as the Territory of Papua. It comprises all the south-eastern portion of the island of New Guinea, together with the islands of the D'Entrecasteaux and Louisiade groups, and all other islands between 8° and 12° S. lat., and 141° and 155° E. long. It has a total area of 90,540 square miles, with a population numbering about half a million.

Commerce.—This, although small (amounting only to about £174,000 per annum, imports £94,000, exports £80,000), shows signs of improvement. The chief products are cocoanuts and sago palm, sandal-wood, ebony, gums, rattan, valuable timbers, and other forest products, with small quantities of gold and copper. The principal imports are drapery goods, hardware, food stuffs, and tobacco. There are four ports of entry, Port Moresby, Samarai, Daru, and Banagai (on Woodlark Island).

Internal Communications.—There is good water communication with some parts of the interior, whilst for postal purposes the colony is treated as a postal district of Queensland.

Port Moresby, in lat. 9°30' S., 147°25' E., is the principal port on the S. coast of the Territory of Papua.

Population.—About 50 whites and 2,500 natives.

Imports.—Rice and general supplies.

Exports.—Copra, sandal-wood, rubber, shell, and ores.

Accommodation.—There is a depth at low tide of 24 ft. at the Government Wharf, and 32 ft. at high water. Vessels are discharged by means of lighters. Vessels of 1,500 tons reg. can be accommodated.

Pilotage.—None.

Port Charges.—**Entrance and Clearance** :—£2 2s. **Wharfage** :—3s. per ton. **Lighterage** :—3s. per ton. **Labour** :—Native labour 1s. per day. *Note.*—The above charges are for the private wharf only, the Government charges not yet being scheduled.

SOLOMON ISLANDS.

The section of the Solomon Islands over which Great Britain exercises a Protectorate are the Islands of Guadalcanar, Malaita, Isabel, Kausagi, and Choiseul, together with a few small islets. Situated about 500 miles to the eastward of New Guinea, they have an area of 8,357 square miles and a population of about 150,000, of whom only a little over one hundred are Europeans. The total trade amounts to nearly £100,000 per annum, of which the exports, consisting of copra, pearl shells, ivory nuts, etc., account for more than one-half. There is a British Resident Commissioner.

Tulagi is a British port in the Solomon Islands.

Population.—Of the Protectorate, 220 Europeans.

Imports.—Tobacco, timber, rice, drapery, hardware, etc.

Exports.—Copra, vegetables, ivory nuts, pearl and tortoise shells, bêche-de-mer, and timber.

Polynesia (British Possessions)—Solomon Islands (*contd.*).

Accommodation.—There is a depth of from 20 to 25 fathoms. The tide rises from 3 to 4 ft. No wharfage accommodation. Leading and harbour lights are being provided.

Port Charges.—Labour:—Native labourers from 1s. to 2s. 6d. per day. Fresh water and coal up to 200 tons, without previous arrangement, may be obtained. Cost of coal, 35s. to 45s. per ton.

TONGA OR FRIENDLY ISLANDS.

Tonga, or the Friendly Islands, although nominally an independent kingdom, is practically a Protectorate of Great Britain, the British High Commissioner for the Western Pacific having for some years exercised jurisdiction within the islands. The three groups of islands—Tonga, Haapai, and Vavau—lie to the E. of Fiji; they have a total area of 390 square miles, with a population, according to the last census taken, of 22,461.

Commerce.—The trade of the islands is of an annual value of £232,000, the returns for 1907 showing imports £97,820, exports £134,193. This trade all passes through the three ports of entry, Nukualofa, Haapai, and Vavau, at which, during the period mentioned above, 26 British steamers of 45,910 tons, 3 British sailing vessels of 447 tons, and 1 Norwegian sailing vessel of 699 tons, entered and cleared. The Customs duties levied on the imports, valued at £97,820, amounted to £12,782, or, in other words, about 13 per cent. on the value. The chief items of import are drapery goods, timber, meat, flour, hardware, ironmongery, galvanized iron and ware, fish, bags and sacks, oil, biscuits, boots and shoes, etc., whilst the exports comprise copra, fruit, fungus, live stock, whale oil, etc.

Internal Communications.—The Government during the year 1907 started to construct roads in the islands of Tongatabu and Vavau, but have so far made little progress, owing to the scarcity of material, and the high rate of wages demanded by the native labourers. There is a postal service.

Currency, Weights and Measures.—British coin is the only legal tender. Accounts are kept in dollars, shillings, and pence; 1 dollar = 4s. The weights and measures are those of the British Imperial standard.

Pilotage.—Pilotage is compulsory at all ports of entry. The rates are :—

	Dols.	s.	d.
Vessels of 60 tons reg. and under	5	0	0 = £1
Vessels exceeding 60 tons reg., per registered ton	0	0	4
Pilotage on any vessel not to exceed	50	0	0 = £10
For every vessel in ballast and vessels carrying copra only whose cargo does not amount to half their registered tonnage, if over 200 tons, half the above rates shall be charged.			
Pilotage shall be charged inwards and outwards.			
For removal in harbour of any vessel	5	0	0 = £1

Harbour and Shipping Dues.—

Vessels from any port beyond the Kingdom per registered ton (charged inwards only).	0	0	3
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EXEMPTIONS FROM SHIPPING DUES.

Steam vessels under contract with His Majesty's Government.
Vessels put back in distress and vessels holding coasting licences.
Sailing vessels shown to the satisfaction of the Collector of Customs to have put in for orders only.

Polynesia (British Possessions)—**Tonga or Friendly Islands (continued).**

Emigration and Immigration Regulations.—Masters of vessels are prohibited from taking Tongan or other natives as passengers or crew without having first procured a permit from the Chief Officer of Customs so to do.

The master of any vessel from beyond the kingdom is required to detain on board his vessel any Chinese arriving in the kingdom till each has paid a head-tax of 50 dols. and has obtained a certificate from the Chief Medical Officer that such native of China is free from disease. He is also required to detain on board any Polynesian, Line Islander, or Coolie labourer until in receipt of a medical certificate from the Chief Medical Officer.

Nukualofa, in lat. $21^{\circ}10'$ S., long. $175^{\circ}5'$ W., on Tongatabu Island, is the capital and chief port of the kingdom.

Population.—About 7,000, Europeans and natives.

Imports.—Food stuffs and dress goods.

Exports.—Copra, bananas, and pineapples.

Accommodation.—There is no bar, and vessels anchor on good holding ground in 13 fathoms. There is a ferro-concrete wharf belonging to the Tongan Government, about 120 ft. long, with a depth alongside of 24 ft. at high water, 18 ft. at low water, and 17 ft. at lowest spring tides. Vessels load and discharge by means of their own tackle, and there is a tramway from ship's side to large sheds. Use of trucks free on wharf.

Pilotage.—Compulsory. Steamers and Sailing vessels—For vessels of 60 tons reg. and under, £1, and 4d. for every ton above 60 reg. tons; maximum, £10. Vessels in ballast, or carrying copra only, whose cargo does not amount to half their reg. tonnage, if over 200 tons, half the above rates are charged. Pilotage is charged both inwards and outwards. **Harbour Pilotage** :—For removal in harbour of any vessel, £1.

Port Charges.—**Harbour Dues** :—3d. per ton on foreign vessels, charged inwards only. Vessels putting back in distress, and sailing vessels putting in for orders only, are exempt from harbour dues. **Mooring** :—To buoys, free on application. **Wharfage** :—Per day, or part of a day, vessels of 2 to 10 tons, 4s. ; from 11 to 20 tons, 6s. ; from 21 to 30 tons, 10s. ; from 31 to 150, 10s. for the first 30 tons, and 2d. for every additional ton. Vessels of 151 to 250 tons, £1 10s. for first 150 tons, and $1\frac{1}{2}$ d. for every additional ton ; vessels of 251 tons to 500 tons, £2 2s. 6d. for the first 250 tons, and 1d. for every additional ton ; vessels over 500 tons, £3 3s. 4d. for the first 500 tons, and $\frac{1}{2}$ d. for every additional ton. Maximum charge, £5 per day. **Entrance and Clearance** :—Free if during office hours ; if after these hours, £1 1s. **Ballast** :—Sand ballast free on application to the Customs. **Labour** :—About 4s. per man per day. **Bill of Health** :—For foreign-going vessels, 10s. **Water** :—Fresh water, 5s. per 100 gallons. **Coasting Licence** :—Vessels wishing to trade in the group can obtain a coasting licence at the following annual rate : Vessels of any kind under 2 tons, £1 ; for every additional ton up to 20 tons reg., 4s. ; for every additional ton above 20 tons (in addition to the amount leviable on the first 20 tons), 2s.

FRENCH POSSESSIONS.

The French settlement of New Caledonia with its dependencies—the Isle of Pines, the Loyalty Isles (consisting of Mare, Lifou, and Uvea, and a number of smaller islands), the Wallis Archipelago, Huen Islands, and the Island of Futuna and Aldi-Las, has a combined area of about 7,650 square miles, with a total population of nearly 60,000. The trade amounts to about $\frac{3}{4}$ of a million pounds sterling per annum, the imports in 1906 (chiefly farinaceous foods and beverages) being valued at £416,488, and the exports (principally nickel, cobalt, chrome and copper ores, coffee beans, and copra) at £368,375. The chief port of New Caledonia is Noumea, which is connected with Sydney by mail steamer service. There is also a monthly mail service along the coast and with outlying ports. A railway from Noumea to Bourail (90 miles) is being constructed, the first section to Dumbea being already open for traffic. A telegraph and telephone service has also been established.

NOUMEA.

Noumea, in lat. 22°7' S., long. 166°30' E., is the capital of New Caledonia.

Imports.—Rice, coal, wine (from France), groceries, drapery, etc.

Exports.—Nickel, chrome, and cobalt ores, copra, hides, sandal-wood, coffee, etc.

Accommodation.—The harbour is a very good one, offering excellent shelter for vessels of any size, with a depth of water of from 5 to 10 fathoms. A stone wharf over 500 yards in length fronts the town, alongside which vessels of 5,000 tons can lie, there being from 20 to 28 ft. of water. There is a patent slip capable of taking vessels up to 1,000 tons, also engineers' workshops, where all repairs to vessels can be executed. A Government crane to lift 10 tons is available on application. A stock of coal is kept, and can be obtained at moderate prices. Stores of all descriptions can also be obtained at moderate prices. Fresh provisions, such as beef, mutton, poultry, pork, vegetables, and milk, are plentiful.

Pilotage.—Compulsory. Vessels entering and leaving :—

			In ballast.	Loaded.
From	100 to	300 reg. tons	30 c.	50 c. per reg. ton.
"	301 "	800 "	24 c.	40 c. " "
"	801 "	1,500 "	21 c.	35 c. " "
"	1,501 "	2,500 "	18 c.	30 c. " "
"	2,501 and above	"	15 c.	25 c. " "

Port Charges.—Vessels loading cargo. **Port and Lighthouse**

Dues :—40 c. per reg. ton. **Sanitary Dues** :—15 c. per reg. ton. All vessels other than French loading at any port beyond Noumea pay **Navigation Dues**, 1 fr. 50 c. per reg. ton, in addition to the above dues. **Fresh Water** :—2 fr. per ton, obtainable from pipes laid on the wharf.

OTHER PORTS IN NEW CALEDONIA.

Thio, in lat. 21°36' S., long. 166°19' E., is the principal port on the E. coast.

Export.—Nickel ore.

Polynesia (French Possessions)—**Other Ports in New Caledonia** (*continued*).

Accommodation.—This is an open roadstead with a good anchorage. Nickel ore is loaded in bulk. A large aerial transporter has recently been constructed, which is capable of loading over 1,000 tons per day. There is a pilot station here, and a large steam tug for towing sailers in and out.

Nakety, on the E. coast, is a well sheltered port, with good anchorage for large vessels.

Canala is on the E. coast, and has a good anchorage. It is well sheltered.

Kouaoua is a well sheltered port on the E. coast, with good anchorage for large vessels.

Poro, on the E. coast, is well sheltered, and has a good anchorage.

Pam, in lat. $20^{\circ}15'$ S., long. $164^{\circ}22'$ E., on the E. coast, is the most northern port. This is a splendid harbour, well sheltered and with a good depth of water. Many vessels loaded at this port when the large copper mines, which have since been shut down, were working. The Pilou mine is now being re-opened.

Nehoue is on the W. coast, at the north end of the island. This is a good port; anchorage good and well sheltered, with depth of water for the largest steamers. Steamers from 6,000 to 10,000 tons load cargoes of chrome ore here, this being the port from which large quantities of chrome are exported.

Port Yate, on the S.E. coast, inside anchorage only fit for vessels of about 200 tons; outside anchorage good for vessels of medium tonnage, but swell from open sea will be felt.

Port Boquet, on the east coast, has a good entrance, and several good anchorages where vessels are sheltered from all winds, bottom mud and coral, in 47 to 69 ft.

Gomen-Teoudie, in lat. $20^{\circ}45'$ S., long. $164^{\circ}30'$ E., is on the W. coast. There is good anchorage, well sheltered and with a depth of water for large vessels. The entrance is good. A small steam-tug and lighters are obtainable, a good deal of nickel ore being loaded here. The cable connecting New Caledonia with Queensland is situated at Teoudie.

Voh is situated on the W. coast. It is well sheltered, and has a good depth of water for large vessels. The entrance is difficult, the passage being narrow. The anchorage for vessels loading ore being some distance from the entrance, sailing vessels should tow in.

Kone, on the W. coast, is well sheltered and has a good depth of water for large vessels. Sailing vessels should tow in. Sailors prefer to load at Pouembout, a few miles further S. Small tugboats are available as well as lighters, large quantities of nickel being extracted here.

Pouembout, on the W. coast, is a well sheltered port, with good anchorage. The entrance is good, and there is a depth of water for large vessels. Large cargoes of nickel ore are loaded here.

Nepoui, or Muce, on the W. coast, is a well sheltered port with good anchorage in 26 ft. to 27 ft. of water. The entrance is very narrow, and sailing vessels should employ a tug.

Polynesia (French Possessions)—

Other Ports in New Caledonia (continued).

Bourail, in lat. $21^{\circ}31'$ S., long. $165^{\circ}29'$ E., is on the W. coast. There is good anchorage, safe with S.E. winds, but with S.W. winds a heavy swell sets in.

For charges, see **Noumea**.

THE SOCIETY ISLANDS AND DEPENDENCIES.

The Society Islands, the most important group in Southern Polynesia, with the Low Archipelago to the East, the Marquesas Islands to the north, the Austral Islands in the south, and other islands and island-groups in this part of the Pacific, belong to France. They are officially known as the French Establishments, and have an area of about 1,520 square miles, with a population of 29,000, mostly Polynesians. The groups and principal islands forming the Establishments consist of the following:—

Name of Group.	Area. Sq. Miles.	Population.	Principal Islands.	Ports.
Society Islands	850	15,300	Tahiti Moorea Raiaatea Huahine Bora Bora	Papeete Port Phaeton Papetoai Uturoa Fare Vaitape
The Low Archipelago.	—	3,800	Tuamotus Fakarava	Tuamotu Rotoava
Marquesas Islands.	480	4,280	Nukuhiwa Tubuai	Taiohai Tubuai
Austral Islands	195	2,700	Rurutu Rimatara	Rurutu Rimatara
Gambier Islands	36	580	Rapa Gambiers	Ahurei Bay Mangareva

These are the only ports which are open to foreign trade, and no ocean-going ship may, without special permission, or in case of necessity, anchor in any other port of the Establishments. The principal articles of export are copra, oranges, cocoanuts, bêche-de-mer, fungus, cotton, cotton seed, pearl shells, and vanilla, while the imports consist of calicoes, cotton cloths, prints, muslins, groceries, etc. There is steamship communication between the island ports and those of New Zealand and Australia.

Papeete harbour is sheltered by a coral reef, and is accessible through two passages; the Grand Passage on the N.W. side, and Taunoa Passage on the N.E. side. There is a good anchorage inside in from 8 to 20 fathoms of water. Vessels drawing 30 ft. can discharge at the wharves. The frontage of the eastern side of the harbour is occupied by the principal stores of the town. High tide between 12 and 1 p.m. and a.m. Rise and fall, normal 1 foot, springs 2 ft. The quay is rather dilapidated.

Pilotage.—Rates for merchant vessels of all nations, both for entering and clearing, excepting mail liners and French sailing vessels coming from outside the French possessions in Oceania:—

	Fr.	e.	
The first 100 tons	4	00	per 10 tons.
From 101 to 400 tons	3	50	"
" 401 „ 500 „	3	00	"
" 501 and upwards	1	50	"

Polynesia (French Possessions)—

The Society Islands and Dependencies (*continued*).

Vessels under 30 tons are exempt. If the pilot is required to move a vessel in the harbour from one place to another, a charge of 20 fr. is made.

Port Charges.—Towage:—Usually about 50 fr. per 100 tons, according to the weather, distance, etc.

Light Dues (due every time a vessel enters Papeete harbour):— $3\frac{3}{4}d.$ per ton, or $37\frac{1}{2}c.$ per ton.

Wharfage:—Vessels under 100 tons, $1\frac{1}{2}d.$ or 15 c. per diem and per ton. Vessels of and over 100 tons, 12s. or 15 fr. per diem. For every square metre of surface occupied on wharf by goods, $1\frac{1}{2}d.$ or 15 c. per day. This is due after the eighth day of deposit on the wharf.

Sanitary Dues:— $1\frac{1}{2}d.$ or 15 c. per ton is levied on every vessel arriving from abroad. Ships of war, coasters, and all vessels not required to carry a bill of health, are exempt from sanitary dues. Vessels engaged in the mail service pay a fixed amount, determined by the Local Government.

Duties on Goods:—Goods of *foreign* origin pay an import duty of 35 per cent. to 40 per cent., according to their nature, as follows—*Octroi-de-Mer*, 10 per cent. to 15 per cent. *ad valorem*: *Droit-de-Douane*, 25 per cent. (*ad valorem* or differential), as per tariff.

Goods of *French* origin pay the *Octroi-de-Mer* tax of 10 per cent., or 15 per cent. *ad valorem*, only.

Coal:—400 to 500 tons steam coal (Newcastle, N.S.W.) usually available, and may be purchased at about 60s. per ton, delivered on board.

Provisions, which are plentiful and good, may be purchased as follows—Fresh meat, 10*d.* to 1s. per lb.; fresh vegetables, 4*d.* per lb.; fresh bread, 4*d.* per lb.

Labour for discharging or loading cargoes may be obtained at 3s. 6*d.* per head per day.

Pure water may be obtained at 3 fr. per ton.

Uturoa, on the Island of Raiatea, is a good and secure port. It is a reef harbour, and possesses two or three entrances. The entrance and exit are both equally good, the wind always blowing directly through. The only disadvantage is the depth of water—about 18 to 24 fathoms. There are altogether seven anchorages on the weather and lee sides of the island, good and accessible, and egress easy, except with a wind due south.

Tahaa Island, to the northward of Raiatea, is surrounded by a number of small islands, which have passages between them encumbered with coral reefs.

Fare harbour is situated at the north-western end of the Island of Huahine, which is the easternmost island of the group.

Vaitape, situated on the western side of Bora Bora, is very spacious, and is one of the finest and safest ports in the Archipelago, but it is difficult of access, the wind blowing directly out. It is well sheltered. There is a depth of 25 fathoms of water, on good holding ground.

Maupiti Island is the westernmost of the group. The harbour is too shallow to admit a vessel of over 100 tons burden.

Pilotage in Marquesas, Gambiers, and Tubuai Islands is not payable unless the pilot has been asked for, and his services made use of. Rates, 2 fr. per decimetre (4 in.) draught. If the pilot's boat is used a charge of 10 fr. per day is made for the boat, and $2\frac{1}{2}$ fr. per day for boatman.

Polynesia (French Possessions)—***The Society Islands and Dependencies* (continued)**

Ahurei Bay is in the Island of Rapa. The roadstead in the Bay is deep, with coral bottom, covered by a thin layer of mud. The squalls which descend from the mountains surrounding the bay are very violent, and the anchors and chains, exposed to constant beating and friction on the coral, are very liable to break. There is little danger of dragging, as the bay is well protected from the sea by the reefs at the entrance. The prevailing winds during eight months of the year, from October to April inclusive, are from the eastward, but about once in three weeks during the summer westerly winds occur for a short period. From May to the middle of September westerly winds prevail, blowing in heavy gusts, with rain, down the valleys of Ahurei Bay, owing to the harbour being open to the eastward, and landlocked in other directions.

GERMAN POSSESSIONS.

The German possessions and protectorates in the Pacific consist of the following :—

Kaiser Wilhelm's Land.

Bismarck Archipelago.

Solomon Islands (part of).

The Caroline, Pelew, and Marianne or Ladrone Islands, with the exception in the case of the last named group of Guam, which was ceded to the United States by Spain in 1898.

Marshall Islands.

Samoan Islands.

These possessions have an estimated total area of 96,160 square miles, with a population of 389,000. The islands are governed by two Imperial Governors, appointed by the Kaiser, the one official having charge of the Samoan Islands, and the other of all the remaining possessions. The trade is of an annual value of a little over £700,000; imports £420,000, exports (mostly copra) £280,000. The currency is in marks, but English and American gold and silver coins circulate freely and are legal tender in most of the islands at the following exchange: 20.42 marks = £1; 20.95 marks = 5 dollars (United States).

BISMARCK ARCHIPELAGO.

This group of islands, formerly known as the New Britain Archipelago, was declared a German protectorate in 1884. The chief islands are New Pommern (formerly New Britain), New Mecklenburg (New Ireland), New Lauenburg (Duke of York Islands), New Hanover, Admiralty, and a number of other islands. When the natives have been brought more under European influence, the trade in the natural products of these richly-endowed islands will be very considerable; at the present time the chief exports are copra, cocoanut fibre, cotton, coffee, and rubber. The German New Guinea Company have a trading station at Mioka, in New Lauenburg, but the seat of administration is Herbertshöhe in New Pommern. During 1907, the Archipelago was visited by 465 merchant vessels of 246,412 tons. Population, 188,500.

CAROLINE, PELEW, AND MARIANNE ISLANDS.

The **Caroline Islands** are so widely scattered that they stretch from the Pelew Islands to the Marshall Archipelago—a distance of 2,000 miles—and so small that the 500 islands and islets included in the group cover an area of less than 500 square miles, while the population, mainly of Malay origin with some Chinese and Japanese, does not exceed 40,000. The largest and most important islands of the group are Ponape, or Ascension Island, Yap, Hogolu, and Kusai.

The **Pelew or Palau Islands**, which lie about 600 miles east of Mindanao, the most southerly of the Philippines, form the most westerly of the Micronesian Archipelagoes. They are 26 in number

Polynesia (German Possessions)—

Caroline, Pelew, and Marianne Islands (continued).

mostly coral, many of them uninhabited; population, 3,100. The largest, **Babelthuap**, is 30 miles in length, and contains the bulk of the population.

The **Marianne** or **Ladrones** form a chain of fifteen islands, with an area of 420 square miles and a population of 2,650. The northern group is actively volcanic and uninhabited.

KAISER WILHELM'S LAND.

Kaiser Wilhelm's Land, which comprises the northern section of the south-east division of the island of New Guinea, together with Long Island, Dampier Island, and a few other small islands, has an area of about 70,000 square miles, with a population of 110,200, of whom 182 are Europeans. The commercial development of the territory, which was declared a German protectorate in 1884, has been entrusted to the German New Guinea Company, the Imperial Government having assumed the administration from the company in 1899. The natural resources include areca, and sago palms, bamboos, ebony, and other woods, while tobacco, coffee, cotton, and cocoa are cultivated on the stations of the Astrolabe plains. The natives barter copra, mother-of-pearl, and trepang; horses, cattle, and goats flourish on the rich natural pastures. There are several good harbours along the coast, including Friedrich-Wilhelmshafen, Berlinhafen, and Konstantinhafen, and at least one magnificent river—the Kaiserin Augusta—which was ascended by the Governor in a steamer, drawing $12\frac{1}{2}$ ft., for about 320 miles. At this point a bar, carrying only 11 ft. of water, put a stop to further progress by the steamer, but a launch was taken another 80 miles, that is, to within 50 miles of the Dutch boundary. There is no bar at the mouth of this fine river.

During the year 1907, 73 merchant vessels of 81,879 tons visited the port of Friedrich-Wilhelmshafen.

MARIANNE ISLANDS.

(See **Caroline, Pelew, and Marianne Islands**, p. 1644.)

MARSHALL ISLANDS.

The Marshall Islands, consisting of two chains or rows of lagoon islands, known respectively as Ratak (with thirteen islands) and Ralik (with eleven islands), are the most northerly of the three eastern archipelagoes of Micronesia. They have an aggregate area of about 150 square miles, and a population estimated at 15,000. The German Commissioner resides at Jaluit, where there is a wharf, with a depth alongside of 17 feet at low water.

Pilotage, which is compulsory, is 4 marks per ft. draught. **Entrance and Clearance**:—7 pfennigs per ton. **Wharfage** is by agreement. **Ballast** is dear. **Labour**:—2 marks per day. The chief article of trade is copra.

Nauru Island, or Pleasant Island, is in lat. $0^{\circ}32'$ S., long. $166^{\circ}55'$ E., and is distant about 160 miles from Ocean Island; it is included in the Marshall group.

Export.—Phosphate.

Polynesia (German Possessions)—Marshall Islands(*contd.*)

Accommodation.—The moorings are laid N.N.E. and S.S.W., and steamers whilst lying there are sheltered from the heavy S. and S.E. swell which prevails more or less throughout the year, and can remain in comparative comfort and perfect safety with all along or off-shore winds. There are two jetties, alongside which lighters load phosphate.

PELEW ISLANDS.

(See **Caroline, Pelew, and Marianne Islands**, p. 1644.)

SAMOAN ISLANDS.

The group of islands known as the Samoan or Navigator Islands lie about 350 miles N.E. of Tonga. The islands are divided into two sections, the one part being governed by Germany and the other being under United States rule. Germany owns the two principal islands, Savaii and Upolu, together with several adjacent islets. These have an area of a little over 1,000 sq. miles, and a population, according to the census taken in 1906, of 33,478. The trade amounts to about £230,000 per annum, the imports, in 1907, consisting of haberdashery, oil, and provisions, being valued at £141,200, and the exports (mainly copra) at £88,450. The Government are having some good roads constructed on the islands. The currency is in German marks, but both English and American gold and silver coins are legal tender and circulate freely. The chief port in the German sphere of influence is Apia on the island of Upolu.

Apia, in lat. 13°52' S., long. 171°43' W., is on the island of Upolu.

Export.—Cocoa.

Accommodation.—This port is secure from May to December, but exposed to hurricanes during the wet season—January to April. The harbour-master and pilot meet all vessels, in the case of sailing vessels well to windward, outside the reef. The anchorage is in 5 to 7 fathoms, sand bottom, with two anchors east and west, and a kedge to prevent swinging; the holding ground is bad. Good leading lights enable large steamers of from 2,000 to 5,600 tons to come in at night time. There is no wharf, and vessels discharge and load by means of lighters alongside. Only small repairs can be effected.

Pilotage.—4 marks per foot in, and 4 marks per foot out.

Port Charges.—**Clearance Fees:**—8 marks. **Quarantine Fees:**—4 marks per 100 reg. tons. **Bill of Health:**—9 marks. Good water can be obtained from the Vaisigago River, and all kinds of stores are available. Fresh meat and vegetables fairly plentiful.

Stone ballast can often be sold to the municipal authorities at Apia.

SOLOMON ISLANDS.

Bougainville and **Buka**, two islands of the Solomon group, form part of the German possessions in the Western Pacific, and are administered by the officials of Kaiser Wilhelm's Land. Sandal-wood and tortoise-shell are the chief commercial products.

UNITED STATES OF AMERICA POSSESSIONS.

HAWAIIAN, OR SANDWICH ISLANDS.

The Hawaiian or Sandwich Islands rank, next to New Zealand, as the most extensive of all the true Polynesian archipelagoes, and the position of the group, midway between the Old and the New Worlds, renders them of much importance. The group consists of nine inhabited islands, Hawaii, Maui, Molokai, Oahu, Kauai, Kahulawi, Lanai, Niihau, and Nekar, having a total area of about 6,450 square miles, with an estimated population of 180,000. The islands were annexed to the United States in 1898 and formally constituted as a territory of the Republic in 1900. The trade, mostly with America, is of an annual value of over twelve million pounds sterling—imports 4 millions, exports $8\frac{1}{2}$ millions. There are about 150 miles of railways in Hawaii, Maui, and Oahu. A lighthouse of the first order and of exceptional power is now in course of construction at Makapuu Point, the eastern extremity of the Island of Oahu. All vessels approaching Honolulu from the Pacific Slope pass through the channel separating Oahu from Molokai, and the need of a lighthouse clearly marking the entrance has been dwelt on by all navigators in these waters. The lighthouse is placed 470 ft. above sea level, and when completed will have a strength of 26,000 candle-power. It is estimated that the light will be visible 25 miles under ordinary conditions and 50 miles in exceptionally clear weather. Another lighthouse of the second order is projected on the north side of the Island of Molokai, but its construction will not be taken in hand for some time to come. Seven lines of steamers connect the islands with the United States, Canada, Australia, New Zealand, China, and Japan, while a private company with a fleet of small steamers provides communication between the different islands.

Honolulu, the principal port, is on the Island of Oahu, lat. $21^{\circ}25' N.$, long. $157^{\circ}55' W.$ Distance from Liverpool by sea, 13,256 miles.

Population.—40,000.

Imports.—Coal, manufactured goods, lime, fertilizers, food-stuffs, flour and fruit.

Exports.—Sugar, wool, coffee, rice, hides, tallow, molasses, bananas, and pine-apples.

Accommodation.—There is 32 ft. of water on the bar at high tides, but work is now proceeding in order to provide an entrance channel 35 ft. deep and 400 ft. wide at mean low water, and to ease the curve at the junction of the entrance channel and the inner harbour by cutting off a projecting point on the western side, on which a lighthouse has hitherto stood. The harbour proper has at present a general width of 900 ft., a

Polynesia (U. S. A. Possessions)—Hawaiian, or Sandwich Islands (*continued*).

length of about 3,000 ft., and a minimum depth of 35 ft. It is now proposed to increase the general width to 1,200 ft. at mean low water. Tides rise and fall about 2 ft., and vessels drawing 26 ft. can discharge alongside the wharf. The total length of quayage is 7,000 ft. A pilot should always be employed. A steam-tug can be obtained if necessary. From March to November the north-east trade winds prevail, and ships cannot get into the harbour without a steam-tug. The Railway Co. have an elevator for discharging coal at 30 to 40 tons per hour.

There are spacious wharves, workshops, foundries and shipyards for repairing vessels. There is also a patent slip capable of taking vessels up to 1,200 tons in light ballast, where repairs can be well and expeditiously executed.

Port Regulations.—No combustible materials, such as pitch, tar, etc., may be heated on board in the harbour, and no rubbish may be thrown overboard.

Tarpaulins must be used while discharging or loading coal, ballast, etc., so as to prevent any from falling into the water.

The commanding officer of any merchant vessel, immediately after her arrival at either of the legalized ports of entry, must make known to the collector of customs the business upon which the vessel has come to the port, and furnish him with a list of passengers, stores, and manifest of cargo before allowing any parcels to be landed, except the mail bags delivered to the order of the postmaster; which manifest must contain an account of the packages, with their marks, numbers, contents, and quantities, also the names of the importers or consignees and shippers.

Time Signals.—A whistle is blown at the steam planing mill at noon and at 1 h. 30 m. 0 s. p.m. standard mean time of the Sandwich Islands, equal to 10 h. 30 m. 0 s. and 12 h. 0 m. 0 s. Greenwich mean time. The signals are unreliable, but the second is the more accurate.

Pilotage.—

	Dols.	c.
Anchoring outside	20	00
In or out, on all sailing vessels under 200 tons, per foot	1	50
In or out, on all other vessels over 200 tons, per ton	0	05
Mail steamers of 1,000 tons or upwards	50	00
Transient steamers of 1,000 tons or upwards	75	00
Anchoring outside, should the vessel come into the harbour	10	00

Vessels entering or leaving without a pilot pay half pilotage.

Port Charges.—Towage :—

	Dols.	c.
Vessels up to 200 tons	30	00
„ 201 to 300 tons	35	00
„ 301 „ 500 „	40	00
„ 501 „ 800 „	45	00
„ 801 „ 1,000 „	50	00
„ 1,001 „ 1,200 „	60	00
„ 1,201 „ 1,400 „	75	00

Above 1,401 tons, 5*d.* per ton, in addition to 75 dols.

Wharfage :—

Per reg. ton (Sundays and Government holidays not counted) per day 0 02

Harbour-master's Fees :—

Boarding vessel on arrival	3	00
„ „ departure	3	00
Moving vessel each time	3	00
Custom House stamped blanks as required, each	1	00

Polynesia (U. S. A. Possessions)—

Hawaiian, or Sandwich Islands (continued).

Storage :—Bricks, coal, ballast, lumber, firewood, 1 c. per day per space of 32 sq. ft. ; anchors, chains, pig ballast, and old iron, $\frac{1}{2}$ c. per day per 2,000 lb. **Ballast** :—From 1 to 2 dols. per ton delivered on the wharf.

Manifest, Entry, and Permit Stamps :—About 4 or 5 dols. **Ship Carpenters** :—4 to 5 dols. per day. **Marine Railway Charges** :—25 c. per ton per day.

Custom House Charges :—About 20 dols. **Labour** :—Native, 2 dols per day.

Water :— $\frac{1}{4}$ c. per gallon, if brought from the pipe in ship's own casks, but if pumped on board from water-boat an extra charge is made per gallon, as per agreement. **Provisions** :—Fresh beef, 8 c. per lb. ; mutton, 8 c. per lb. ; pork, 10 c. to $12\frac{1}{2}$ c. per lb. ; potatoes, about 2 dols. 50 c. per 100 lb. ; flour, bread, and salt meat, moderate. All kinds of marine stores can be procured at moderate rates.

Hilo, or Byron Bay, in lat. $19^{\circ}50'$ N., long. $155^{\circ}7'$ W., is on the island of Hawaii. Distance from Liverpool, 13,000 miles.

Population.—About 2,000.

Exports.—Sugar, coffee, pine-apples, hides, bananas, and timber.

Accommodation.—Hilo Bay, on the eastern side of the island of Hawaii, is practically an open roadstead, protected to a limited extent by Blonde Reef, but otherwise exposed. Strong north-easterly winds prevail most of the time, causing a choppy sea outside the bay and a considerable swell within it, thereby rendering difficult the loading or unloading of vessels. With a north wind blowing the sea becomes so heavy that it is impossible for ships to lie at the wharves or even work in the bay. The projected work in the harbour is the construction, at an estimated cost of £340,000, of a breakwater along Blonde Reef to Coconut Island. Hilo is an important port in respect of the shipment of sugar. During the year ended January 31, 1906, the value of sugar loaded for the United States amounted to £1,003,758. The usual anchorage is in 5 to 7 fathoms, and is well sheltered, with a good holding ground of mud and sand.

Pilotage.—1 dol. 50 c. per foot in or out. A pilot should be taken by strangers.

Excellent fresh water and provisions can be obtained at moderate prices.

Lahaina is situated on the west coast of the island of Maui, in lat. $20^{\circ}51'$ N., long. $156^{\circ}41'$ W. Climate very salubrious.

Population.—About 5,000.

Imports.—General merchandise, lime, fertilizers, and food-stuffs.

Exports.—Sugar, coffee, potatoes, etc.

Accommodation.—The anchorage is in 10 fathoms in an open roadstead, with a bottom of sand and coral.

Port Charges.—**Customs Officer** (who acts as pilot when required) :—5 dols. **Light Dues** :—3 dols.

Provisions are cheap and abundant.

Pearl Harbour.—Pearl Harbour lies some 8 miles to the west of Honolulu. The harbour consists of a series of deep-water lochs, situated at a distance, as the crow flies, from the outer reef of 3 nautical miles. The sinuosities of the approach, however, nearly double this distance for

Polynesia (U. S. A. Possessions)—**Hawaiian, or Sandwich Islands** (*continued*).

a vessel desiring to enter it. Active measures are being taken by the United States naval and by the territorial authorities to secure an appropriation with a view to making it an important naval station fully equipped with dry docks and the necessary plant for executing every description of ship repairs. Up to the present the only work that has been undertaken at Pearl Harbour is the cutting of a channel, 212 ft. wide at the bottom, through the outer reef. The dredging of the spits projecting into the approach is to be taken in hand with a view to providing a waterway, 37 ft. in depth, at no point in which there shall be a curve of less than 2,000 ft. radius.

SAMOAN ISLANDS.

The important island of Tutuila and all the other islands of the Samoan group lying E. of long. 171° E., were assigned to the United States of America by the Anglo-German Agreement of November 14, 1899. Tutuila, lying 70 miles from Apia, in lat. $14^{\circ}15'$ S., long. $170^{\circ}45'$ W., with the island of Manu and the islets Ofu, Olesega, and Tau, possesses an area of about 79 square miles and a population of about 6,000.

Pago Pago (on Admiralty charts Pango Pango), is in lat. $14^{\circ}17'$ S., long. $170^{\circ}50'$ W., on the south coast of Tutuila Island.

Population.—1,000.

Imports.—Food stuffs, dry goods, groceries, and lumber.

Exports.—Copra.

Accommodation.—The harbour, which penetrates the coast like a fiord, is landlocked, but the anchorage is on a sandy bottom in 15 to 30 fathoms. It is a United States naval station, and will accommodate the largest vessels in the world.

Pilotage.—Not compulsory. 25 dols. to bring in and take out any vessel.

Port Charges.—**Entrance and Clearance** :—Foreign vessels, 50 c. in, and the same out. **Receiving Manifest** :—25 c. **Bill of Health** :—25 c.

Customs Overtime :—Boarding on Sundays, 2 dols. 50 c. **Labour** :—1 dol. per day.

Appendix.

CHARTER-PARTIES.

THE almost general adoption within the past fifty years of steam as the motive power for ships at sea, and the introduction of the electric telegraph, have been the means of effecting many and great changes in the conditions governing the shipping industry, not the least of which is the direct control which owners are now enabled to exercise in connection with the employment of their ships. The extent to which steamers have supplanted sailing vessels may be best shown, perhaps, by reference to the figures dealing with British shipping at two different periods. The total tonnage of British mercantile vessels registered in 1840 was 3,311,538 tons. This included 28,138 sailing vessels and 824 steamers, of which 1,904 sailing vessels and 77 steamers had been built during that year. At the end of the year 1907 there were 20,764 vessels, of 11,458,099 total tonnage, registered in the United Kingdom. Of these, 10,907 were steamers and 9,857 sailing vessels. And just as this change has been brought about in the mercantile marine of Great Britain, so in like manner has it also occurred, to a more or less extent, in connection with the commercial navies of other countries, so that the figures quoted above serve to show the extent to which steam has displaced sail propulsion.

The passing of the sailing ship and the successful installation of the submarine cable, has witnessed a considerable curtailment of the powers once exercised by the shipmaster in the employment of the ship, with a corresponding relief from the great responsibilities which were at all times associated with such powers. To-day the shipmaster is little more than a chief navigating officer, whilst the owner or managing director of the vessel transacts the business of the ship and enters into engagements for its employment from the snug security of his office in one of the great commercial centres of the world. These engagements generally take the form of contracts of affreightment for the carriage of goods, etc., from one port to another in return for certain sums to be paid, such sums being termed freight.

Vessels are loaded either on the berth or under a charter-party. In the first instance the loading is carried out by the agents of the owners, who engage the cargo to the best advantage for the vessel from various shippers. On the shipment being affected, the shippers receive a document signed by the captain, or someone authorized by him, such document being termed the bill of lading. This document contains a description of the goods shipped, ports of loading and destination, amount and manner of payment of freight, together with certain stipulations governing the voyage. This is forwarded to the consignee of the goods at the port of destination, and forms

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his title to receive delivery. But when the engagement is to furnish a ship for a stated period of time, or for the conveyance of a complete cargo on a particular voyage or series of voyages, the document containing the terms of such contract is designated a "charter-party." The drawing up of these contracts demands extreme care if disputes and consequent lawsuits are to be avoided. That this is generally recognized is evidenced by the fact that in all branches of the shipping industry, special forms of charter have been adopted for use in connection with the particular class of cargo to be carried. Amongst these special forms we may mention the Baltcon coal charter, the Salt (east) charter, the Chamber of Shipping ore charter, the Chamber of Shipping British North America (Atlantic) wood charter, the Chamber of Shipping wood charter (Scandinavia and Finland) to the United Kingdom, 1889, and the Anglo-American cotton charter. For ordinary time and voyage charters special forms are also available. The due completion of these printed skeleton agreements calls for the exercise of much care and accuracy, although in most instances, when disputes arise, the courts will not put a strict legal interpretation upon the terms of the charter-party, but will consider what were the real intentions of the parties to the agreement. It may sometimes happen in cases in which these printed forms have been used, that a written clause and a printed clause will appear in direct contradiction the one to the other, owing to the printed clause having been left in by inadvertence. In such cases it will usually be held that the written clause so clearly expresses the intention of the contracting parties, that it must prevail and be accepted in lieu of the printed clause, which only an oversight allowed to remain as part of the agreement. At the same time, there are certain fundamental conditions which must be observed. Dealing first with the voyage charter, the preamble specifies the names of the parties to the agreement, with the description of the vessel, and should, in addition to the name, state her registered tonnage, flag and position at the time the charter is signed.

The name and national character of the vessel must be correctly given, the latter being of the utmost importance, especially in time of war, when questions of neutrality are likely to arise.

Should the actual tonnage of the ship differ from that named in the charter, it will not necessarily constitute a breach of the conditions, unless the difference is unreasonably great, or such as to materially interfere with the due performance of the contract entered into. When the loading capacity is inserted in the charter-party, it will be taken to refer to the capacity of the vessel, with special reference to the contemplated voyage, and also to the particular cargo to be carried, should such be known to the owners of the ship. In the absence, however, of anything in the proposed voyage or cargo which may be said to give special meaning to the guarantee, it will be inter-

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puted as a general guarantee of the carrying capacity of the ship when laden with general cargo.

The classification of a ship on the register must, if recorded in the charter, be correctly stated as at the date such agreement is entered into, but the mere fact of a ship running off her letter during the period covered by the charter will not be sufficient to invalidate the agreement, it having been held in the case of a ship chartered as "The good ship 100 A1" that although the statement amounted to a warranty of her class at Lloyd's at the time of the charter, it was not a warranty that she would continue of that class during the charter, or that the owners would omit no act necessary to retain her in that class.

Then follow the conditions of the contract. After warranting the vessel to be "stout, taut, strong, and in every way fitted for the voyage," the owners undertake that she shall proceed to her loading port or ports, either direct or via a port at which her definite loading orders may be given her. In the latter case, owners should be careful to stipulate that such orders are to be given within a fixed time, say twelve or twenty-four hours after arrival, or the time to count in her lay-days. The warranty of seaworthiness and fitness contained in a charter-party require that the ship be really fit to undertake the voyage contracted for, and in this connection, should any difficulties arise, and the agreement come under review by a legal tribunal, it will be found that the clause containing this warranty or implied warranty, will be read with special regard to the season of the year, and also to the particular class of cargo which it agreed to convey.

In confirmation of this, the action which followed the loss of the s.s. *Pentland* may be quoted. The vessel left Newport with a cargo of coal for Torre del Annunziata, using only one of her two boilers, and whilst proceeding down the river, she ran aground, broke in two, and the cargo was lost. The court held in favour of the owners that the vessel was, in this particular case, perfectly seaworthy whilst navigating with the power derived from one boiler only, and that the cause of her loss was due to her "smelling" the ground. In another case, *Morris & Morris v. The Ocean Steam Navigation Company*, damage was done to a shipment of Havana cigars shipped at New York on board the s.s. *Teutonic*, by reason of the bursting of a water pipe passing through the hold in which the cigars were stowed, it being proved that the pipe was frozen when the shipment took place. The bill of lading contained the usual seaworthiness clause, and also embodied the American Carriers Act of 1893. It further contained a proviso that "it is also mutually agreed that the value of each package receipted for as above does not exceed the sum of \$100, unless otherwise stated herein, on which basis the rate of freight is adjusted, etc." Mr. Justice Mathew, in giving his decision in the case, held that there was no question that the vessel was unseaworthy when

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she sailed, because "the pipes were in such a condition that damage to the cargo was inevitable," and he further decided that the owners could not bring themselves within the protective clauses of the bill of lading and Carriers Act, because they had not "exercised due diligence to make the vessel seaworthy." But the learned judge also considered the question of the limitations of the liability of the carrying vessel for any damage to a parcel declared not for a higher value, and it is interesting to note that, although, as stated above, he held the shipowners liable for the result of the unseaworthiness, which, in his opinion, they could have prevented by the exercise of care, still he considered that the intention of this valuation clause was not merely that the freight might be properly adjusted, but that the liability of the vessel might also be limited in the event of damage, however arising.

This last point is of vast importance, not entirely from the mere fact that such a clause curtails the carrier's possible liabilities, but also because whenever a shipper has really valuable goods, susceptible of damage or loss by theft, the insertion of such a clause compels him to give the master of the vessel an opportunity of asking a suitable freight and taking special care of the goods which carry with them the greatest liability.

In the case of time charters, during the continuance of which a vessel may call at various ports, the owner must, under this warranty clause, maintain the ship in a fit and seaworthy condition, and to this end must arrange for the execution, as occasion may offer, of all necessary repairs, etc.

The position of a ship as stated in the charter, and the undertaking that she will be at a certain place on a certain day ready to receive cargo, or that she will start on her voyage at a specified time, are material undertakings, and failure to perform either of such conditions is sufficient to relieve the charterer of all obligation under the agreement. And it may here be conveniently mentioned that the clause "ready to load by the——" means that not only must the ship be ready to receive cargo in all her holds by such time, but that the master must be in possession of all papers, permits, etc., which the shipping laws of the country, or the regulations of the port, require him to hold before loading may begin. Although the charterer may throw up the charter on account of failure to perform a specific condition, he cannot do so where the clause is only of a general character, i.e. to the effect that the ship will proceed or sail or load with all convenient speed.

In the case of the *Aino*, *Engman v. Palgrave Brown & Son*, a decision was given which is of the greatest importance to shipowners, having regard to the frequent statements of position of the vessel, when charter-parties are entered into. Under a charter-party dated March 10, 1898, it was provided that the vessel "now in Finland,

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bound to London" should proceed to Archangel from London to load a cargo of timber for Great Yarmouth. As a matter of fact, the vessel was, at that time, ice-bound in a Finnish port, from which she was released early in May, and instead of proceeding to London and thence to Archangel to carry out the charter of March 10 above referred to, she entered upon another charter which had been signed in January, 1898. The result was that when the vessel eventually carried the Archangel cargo, the charterers had to pay a much higher rate for the insurance of the said cargo than they would have had to pay had she proceeded straight to London and thence to Archangel when she got free from the ice. The court held that the words "now in Finland bound to London," were a warranty that the ship was in some port in Finland from which she was under an engagement to proceed direct to London; that there had been a breach of the warranty; and that the charterers were entitled to recover as damages the difference between the cost of insurance on August 8, the date upon which she might have loaded at Archangel, and on September 2, when she eventually did so.

Owners should see that every charter-party contains provisions under which the ship, if ordered to any loading port or ports at which there is not a sufficient depth of water to allow her to leave when fully laden, may complete her loading elsewhere where there is a sufficiency of water. This will probably involve lighterage of part of the cargo, and it is important that the agreement should clearly set forth by whom the cost of such lighterage shall be borne. It is also important that it be stipulated in the charter that the vessel shall load "always afloat," although small coasting vessels at times have to lie on the ground in certain small tidal harbours.

The importance of this clause is shown by the following actions which have been tried in the English courts. In the case of *Reynolds v. Tomlinson*, the ship *Antofogasta* was chartered to load wheat at Portland, and to proceed to Queenstown, Falmouth or Plymouth for orders, to discharge at a safe port in the United Kingdom or Continent. The ship carried out these instructions, and was ordered to Gloucester to discharge. On the arrival of the vessel at Sharpness, the merchants required the master to lighten the ship sufficiently to enable her to proceed up the canal to Gloucester. The master refused to do so on the ground that he could not be required to discharge at more than one port, and he accordingly discharged all the cargo at Sharpness instead of Gloucester. An action followed, and in giving judgment, the court held that "the charter provides that the port to which the vessel is ordered to go must be a safe port. The port to which in fact she was ordered to go was Gloucester, and that was not a safe port for this ship, for she could not get safely there with her cargo—she drew far too much water to get beyond Sharpness with her cargo on board."

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In the case of the *Carlton Steamship Company, Ltd., v. The Castle Mail Packet Company, Ltd.*, the House of Lords decided that in entering into a charter-party to load or discharge at certain ports, both the shipowners and charterer are supposed to foresee the difficulties as well as the advantages of loading and discharging at such ports—and, so far as they may deem it necessary, to provide against these in chartering. Although in this case the vessel was ordered into a berth at Maryport, where she could not lie “always afloat” and load, and which she had to leave on falling tide, with only part cargo loaded (to return after a delay of fifteen days to complete), it was decided that, having regard to the peculiarities of the harbour, and to the fact that the charterers had discharged the obligation which rested upon them (in the absence of any reference to lay-days in the charter), to load within a reasonable time, the shipowners must bear their own loss of time involved in withdrawing the vessel from the port until the tides suited her return.

In the case of a charter under which a vessel is “to proceed to — port, or as near thereto as she can safely get, and there load a full and complete cargo,” the shipowner is under obligation to the charterers to report the arrival of the ship at such port and her readiness to load cargo at the place agreed upon. The words “a full and complete cargo” mean a full and complete cargo according to the custom of the port of loading.

In a reported case, the charter-party provided that the ship should proceed to Riga via Bolderaa, or as near thereto as she could safely get, and there load from the agents of the affreighter a full cargo of fir timber. At the time of signing the charter, both parties to the agreement were aware that a full cargo could not be loaded inside the bar at Bolderaa, and the vessel proceed therewith to sea. The vessel arrived at Bolderaa, which is inside a bar, being a bar harbour; the charterer’s agents having loaded the ship inside the bar to the full extent to which she was capable of being loaded consistent with her being able to get out of the harbour over the bar, the vessel left the harbour and came to anchor as near to Bolderaa as she could safely get outside the bar for the purpose of taking in the remainder of a full cargo. The affreighter’s agents refused to give cargo outside the bar at their principal’s expense, contending that he was not liable under the charter party to give cargo outside the bar. The ship, therefore, sailed away and returned to Liverpool. An action at law followed.

A ship having arrived at the loading port named in a charter, and given notice of readiness to load, the obligation of the charterer to furnish a cargo in accordance with the terms of the agreement is absolute, and in the absence of any qualifying stipulations contained in the contract, the cargo tendered shall be one reasonably complying with the terms of the charter. The loading completed, the vessel must

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proceed on her voyage with due dispatch, the undertaking on the part of the shipowner being to bring his ship to the primary destination named in the charter, unless he is prevented from getting his ship to that destination by some obstruction or disability of such a character that it cannot be overcome by the shipowner by any reasonable means except within such time as having regard to the adventure of both the shipowner and the charterers is, as a matter of business, wholly unreasonable. This reading of the law was laid down by Lord Watson in the House of Lords, and would appear to bear out the opinion expressed by many practitioners in the Admiralty Courts that, however unreasonable the delay may be, if it is not of a nature as to frustrate the commercial performance of the undertaking, such delay would not justify the repudiation of the charter, although it might and probably would provide ground for an action for damages on the part of the charterer, the shipowner seeking to recover from the charterer for dead freight owing to the ship not having loaded with a full and complete cargo according to the terms of the charter-party. The court held that the plaintiff shipowner was entitled to recover because, according to the charter-party, the vessel need not have crossed the bar at all, for she could not be said to "safely get" to a place from which she could not safely get away with a full cargo, and that her going inside the bar was for the charterer's accommodation, and that the effect of such proceeding was to save him expense. It would therefore seem that in such case a ship could either (1) load her full cargo outside the bar, if such a loading berth is safe; (2) refuse to load at all if a loading berth outside the bar is unsafe; (3) go in, and load such a cargo as she can cross the bar with and no more, without being compelled to complete her loading outside the bar.

On arrival at the port of destination, questions concerning orders, lighterage, etc., are sure to arise, and the manner of dealing with these should be provided for in the charter party in like manner to similar obligations at the port of loading. The shipowner or his agent is not bound on arrival at the port of destination to give notice of his readiness to discharge unless such notice is especially provided for in the charter, or it be the custom of the port. At the same time, if by any omission or wrongful act on the part of the owner or his agent, the charterer or consignees are prevented from learning of the arrival in port of the ship, such omission or wrongful act would be sufficient to debar the owners from sustaining any claim for demurrage.

Then follow the stipulations as to the freight, these clearly setting forth the rate, and stating on what it is payable, whether dead-weight, measurement, or other basis; also when it is payable, if in advance, or on right and true delivery of the cargo. It often happens in the latter case that owners may require funds to pay the disbursements of the vessel at her loading port, and in this case it is usual

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for the charterers to make an advance for this purpose, charging a small commission for the accommodation. All such advances, etc., should be stipulated for in the clearest possible manner, vague or contradictory statements often leading to litigation, as the following recorded cases show. A charter contained the clause, "one-third freight to be advanced if required." The vessel left Hull early in the morning, and was totally lost within an hour after sailing. Bills of lading were presented for signature in the ordinary course of business, and the shipowner then gave notice that he required the advance. This was refused, and at the trial of the action which followed, it was decided that the loss of the vessel terminated the contract, and that the charterers were entitled to refuse to make the advance. The majority of charters in consequence now contain the additional words, "ship lost or not lost."

The following clause is also frequently inserted in charters: "One-third freight to be advanced." The effect of this is supposed to be well understood, but if it be qualified in another part of the charter by the words "no freight to be paid on goods lost or jettisoned," complications are very likely to arise, and it would be far better and more satisfactory that the meaning of both parties to the contract should be made quite clear in all cases.

The payment of freight can only be demanded in accordance with the express stipulations of the charter-party, or should no such stipulations appear in the contract, then in accordance with the custom of the port or trade; it being always borne in mind that whilst the custom of a port or trade may explain the mode of performance of a contract, it cannot change its intrinsic character. In these circumstances, the courts will only allow as admissible, evidence to explain ambiguous mercantile expressions in a charter, or to make such additions or corrections, as are not inconsistent with the written contracts between the parties. But the word "freight" is so well understood when incorporated in a charter that it cannot be explained by usage, though its methods of payment, which varies in almost each port, can. Thus in a case in which a bill of lading stated the goods shipped at Blank were deliverable at Dash, "he or they pay freight for the said goods five-eighths of a penny per pound—with 5 per cent. primage and average as accustomed," the court held the evidence of a custom at Dash to deduct three months' discount on freights on goods from Blank was admissible. In a case, however, in which the clause simply read "freight payable in London," it was held that evidence by which it was sought to prove that by the custom of the steam shipping trade, this meant "freight payable in advance in London" was inadmissible, the word "freight" being unambiguous, and there being nothing in the context to qualify it. It will be found to be in the interest of owners if a clause to the effect "freight, in cash without discount," be inserted, as this would prevent

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any deductions in accordance with custom of port or trade being made.

Where freight is payable in accordance with the weight or measurement, and where on arrival at the port of discharge the goods are found to be larger or smaller than when shipped owing to swelling, expansion after hydraulic pressure, or shrinkage, then the freight is payable on the amount shipped, unless express stipulation or usage be proved, and not on the amount delivered. A ship loaded "a full and complete cargo" of corn. The bill of lading showed 2,664 quarters shipped; owing to heat, the corn swelled, and 2,785 quarters were delivered, but freight was only payable on the amount shipped. And in the case of a cargo of cotton hydraulically pressed for shipment, and which expanded on discharge, the court held that, apart from any custom to pay by the measurement at the port of loading, the freight was payable on the quantity delivered as loaded, and not on the measurement after discharge.

The hire of vessels engaged under a time charter is, in the absence of express agreement, payable during the ship's detention by blockade, embargo, bad weather, or repairs.

A shipowner or his duly authorized agent has a lien upon goods carried for the charges incurred in their conveyance, provided that a lien for freight in common law, being a possessory lien, only exists where the agreed time for payment of freight is contemporaneous with the time of delivery of the goods. Therefore it would seem, and indeed has been laid down by high legal authority, that in the absence of express agreement, there is no lien for—

(a) Advance freight, or freight payable before the delivery of the goods.

(b) Freight agreed to be paid after the delivery of the goods, or not due at the time the goods are claimed,

The lien possessed in common law for freight extends to all goods belonging to the same consignee on the same voyage for the freight due on all or any part of them, but not to goods on different voyages under different contracts.

It should be thoroughly recognized that common law gives no lien on cargo in respect of—

(a) Dead freight.

(b) To holders of a bill of exchange drawn against a particular cargo.

(c) For wharfage dues on overside goods.

(d) For port charges, even though the charterer has agreed to pay them.

(e) For demurrage or damages by detention, nor on goods shipped on ship's account;

but while this is so, such a lien may be provided for by express agreement, and if such express conditions are inserted in either the charter-

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party or the bill of lading, the parties to the contract will not be able to plead as an answer to such lien that it is inconvenient ; but special clauses such as the following, by which a lien is constituted on goods shipped in respect of " all previously unsatisfied freight and charges on other goods due in respect of any shipment by any steamer or steamers of this line from either shipper or consignee, such lien to be made available at owner's option by sale or otherwise," should be printed in heavy conspicuous type, so that it cannot afterwards be said that the inclusion of such special clause was not brought to the notice of the shipper.

The agency at both loading and discharging ports should be provided for by the insertion of a clause stating whether such agents are to be appointed by the owners, which is perhaps the most desirable, or by the charterers. In the event of the latter mode being adopted, the amount of the agent's remuneration should be clearly specified.

The stevedore in the ordinary course is appointed by the owners, but some charterers stipulate for the privilege of doing this, and as the payment for the work is almost always made a charge upon the ship, care should be taken that the rate be fixed. The time for loading and discharging should also be made the subject of a clause in the charter-party. This is either a fixed number of days, or rate per ton per day for both operations, and are often made reversible, so that if the time for loading is exceeded, it can be made up by extra dispatch in discharging. Some charters, however, simply stipulate that the operations shall be carried out " according to the custom of the ports," or " as fast as steamer can take in and deliver," but a definite statement of the number of days is more desirable. Sundays and holidays are generally excepted from the lay-days, and in the case of a number of ports, charterers often protect themselves by a stipulation that time lost through bad weather is not to count, but owners should endeavour to keep this out of the charter. Loss of time through " restraint of rulers and peoples, strikes, lock-outs, and other causes beyond the control of either party," are nearly always accepted. When the time agreed upon is exceeded, a penalty for demurrage is stipulated as payable by the shippers or receivers to the owners. This should always be payable day by day as incurred, and be made to include Sundays and holidays. Charterers on their part occasionally claim the insertion of a clause stipulating that should the vessel be loaded in less than the agreed time, a premium called " dispatch money " shall be paid to them in respect of all time thus saved. This dispatch money is always at a lower rate than that for demurrage, generally one-half, but wherever possible the clause should be excluded.

Under a charter-party containing the following clause: " Lay-days to count from the time the master has got the ship reported, berthed and ready to receive cargo, and given notice of same in writing to the charterers," the ship *River Ettrick* proceeded in ballast from

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Harwich on October 17 to Bo'ness to load. On the 21st a berth became vacant, but as the cargo was not ready, the harbour-master refused to allow the vessel to enter the dock, and it was not until October 26 that she was berthed. In a claim for demurrage, the House of Lords decided against the shipowner, and held that there was no obligation on the part of the charterer to have cargo ready for the vessel against the chance of a berth being vacated by another vessel on the 21st.

A clause relieving owner from responsibility through the negligence of the master or crew should always be inserted. The importance of such a clause was shown in the case of *Milburn v. The Jamaica Fruit Importing & Trading Company, Ltd.*, in which a point of considerable interest was decided. The steamship *Port Victor* was chartered by the defendants on the usual form of time charter, which included a proper negligence clause. Amongst other goods shipped on board the *Port Victor* appear to have been certain government stores, in connection with which the Government refused to admit the negligence clause in the bills of lading, and the charterers directed the master to sign bills of lading without such clause. The vessel got into collision, for which she was held entirely to blame, and General Average charges, consequent upon the vessel putting back to her loading port, were incurred; these charges afterwards formed the subject of an action by the owners of the ship against the charterers, and the learned judge who tried the case held that they were entitled to recover them. This is of the utmost importance, as questions are constantly arising owing to the action of charterers sub-letting or giving bills of lading not in accordance with the terms of the original contract of affreightment. It is satisfactory, therefore, to find that the judgment recorded in this action maintains the right of shipowners to the advantages of all protective clauses in their contracts with the charterers.

Most charters provide that certain commissions are to be paid. These take the form of address commission, payable to the charterers or their agents, and brokerage, payable to the broker who negotiates the business between the two parties. The sum payable in respect of such address commission and brokerage vary in each case in accordance with the special circumstances connected therewith, but the amounts so to be paid should be definitely stated.

The other form of charter-party—a time charter—is an agreement by which the charterer hires the vessel for a fixed period in consideration of the payment of a specified sum per month, and employs her, within certain fixed limits, in such trades as may suit him best. In this case the owners simply provide the vessel, together with officers, crew, and stores, and pay the insurance; all other expenses, including bunker coal, being for the charterer's account. The hire is nearly always paid in advance, either monthly or half-monthly. Stipulations are made as to the port of delivery and re-delivery, and also provision against time

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lost through breakdown or accident at sea, with liberty to the owners to withdraw the vessel in case of default in payment of hire.

A time charter contained the following clause: "Loss of time from deficiency of men or stores, or from any defects or breakdowns of machinery which prevents the vessel working for twenty-four hours, shall be for account of the owners." The vessel got on shore and remained there for several weeks; the shipowner allowed the charterer to take credit for the time so lost, and claimed the loss from his underwriters on freight, but the latter successfully contested the claim on the ground that there had been no breakdown of machinery, and that the shipowner was therefore not justified in giving credit for this detention.

This clause was also the subject of long and costly proceedings which only terminated in the House of Lords. The vessel's machinery broke down, and she was towed to her port of destination at the joint expense of the charterer and shipowner; the latter claimed that the time should count from the date of leaving the port of refuge in tow, but it was finally held that the payment of hire ceased until the vessel arrived in her discharging berth at the final port of discharge.

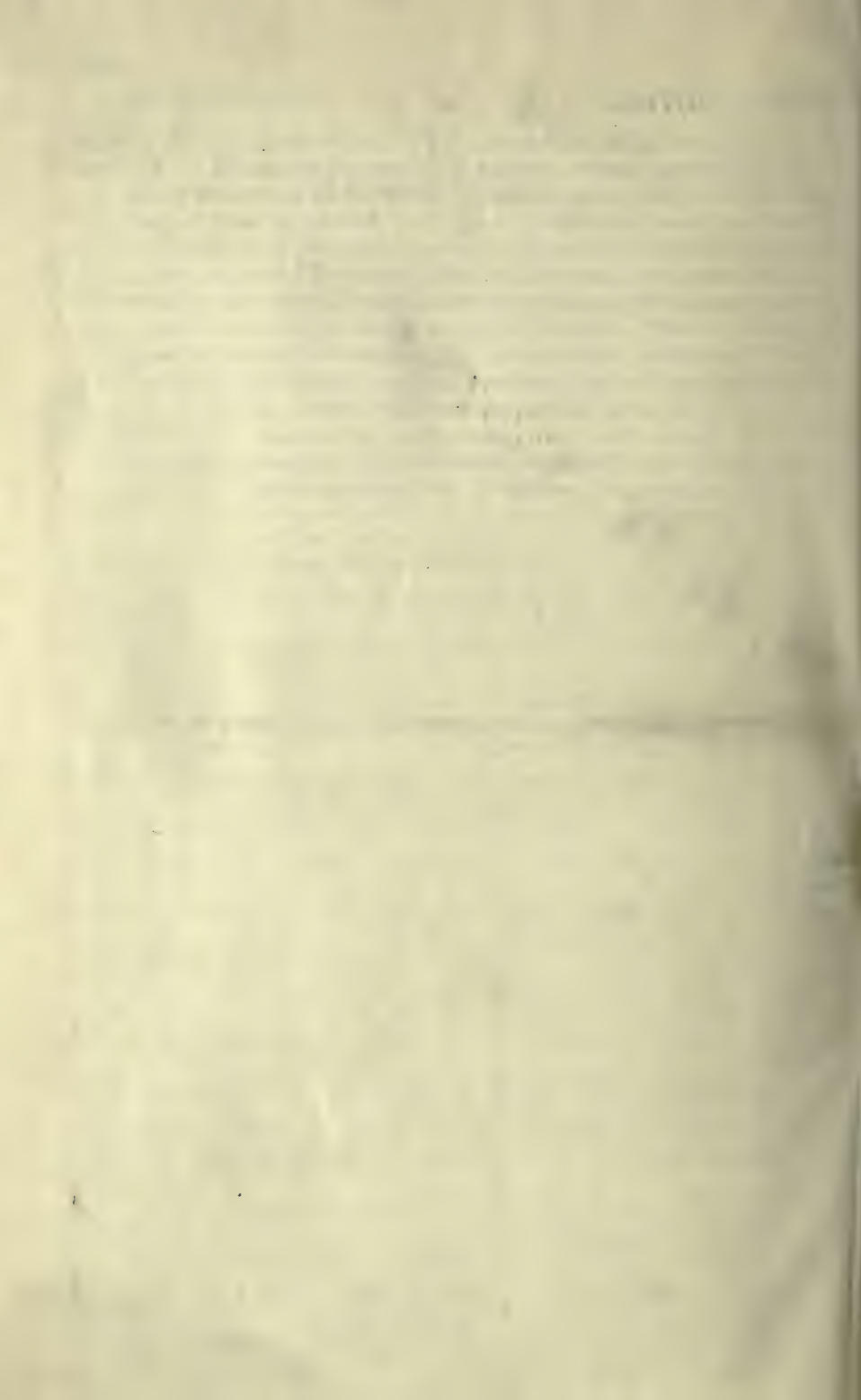
From the foregoing it will be evident that a charter-party is not an agreement to be lightly signed, but one which demands careful study and much thought, and although the various Protecting and Indemnity Societies and Freight and Demurrage Associations have done much in providing for the exclusion of "dirty" terms in charters, yet it behoves shipowners to be always on the watch against the admission of vague or misleading clauses into their contracts of carriage or hire. One most objectionable clause is sometimes found in time charters by which shipowners appear to personally guarantee the payment of claims, even if they are not recoverable from the association in which the vessel is entered, or they have been caused by the fault or with the privity of the charterer. The clause is worded as follows: "The owners shall hold the charterers covered for any claim in consequence of accidents, loss or damage to cargo, for which owners are covered by Protecting and Indemnity Societies or other clubs in which the steamer is entered." By a slight variation it is sometimes made to read as under: "The owners shall keep the charterers indemnified, to the same extent that would apply for owners if working the steamer for their own benefit in the trades in which steamer is employed by charterers, against all such claims and risks as are covered by the Protecting and Indemnity Associations."

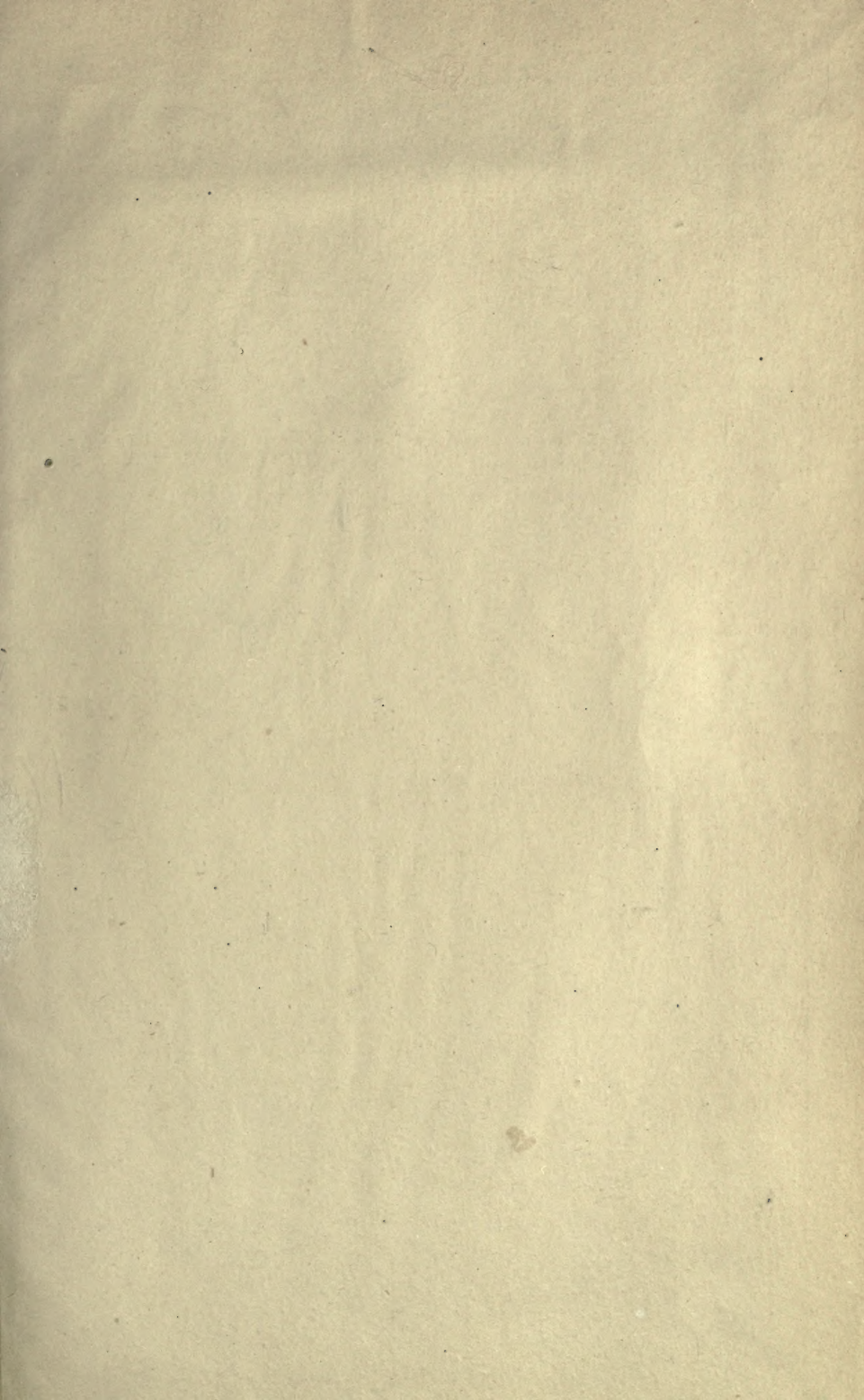
It has been suggested that in order to avoid any difficulty under such clauses, the Protecting and Indemnity Associations should admit time charterers to membership during the period covered by such charter, and thus, while granting them all the privileges of membership, make them subject to all the rules of the Association. At first sight, this may appear a very excellent idea, but there are many and

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serious objections to its adoption, and failing an arrangement of the kind, the following clause appears the least objectionable : " Owners to protect charterers to the extent the latter would have been protected if they had been members of the —— Protecting and Indemnity Association against all indemnity risks as covered by the Association."

In the foregoing pages we have briefly referred to some of the more important points that are likely to arise in connection with contracts of affreightment, and while it would be quite impossible, within the limits of this article, to discuss with the detail that would be required, the many legal points that can be, and are on occasions, raised in connection with the terms and application of charter-parties, there will probably be found one or two points which shipowners when entering into agreements for the employment of their ships, and shipmasters during such employment, would do well to remember.





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